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**spills his guts...**



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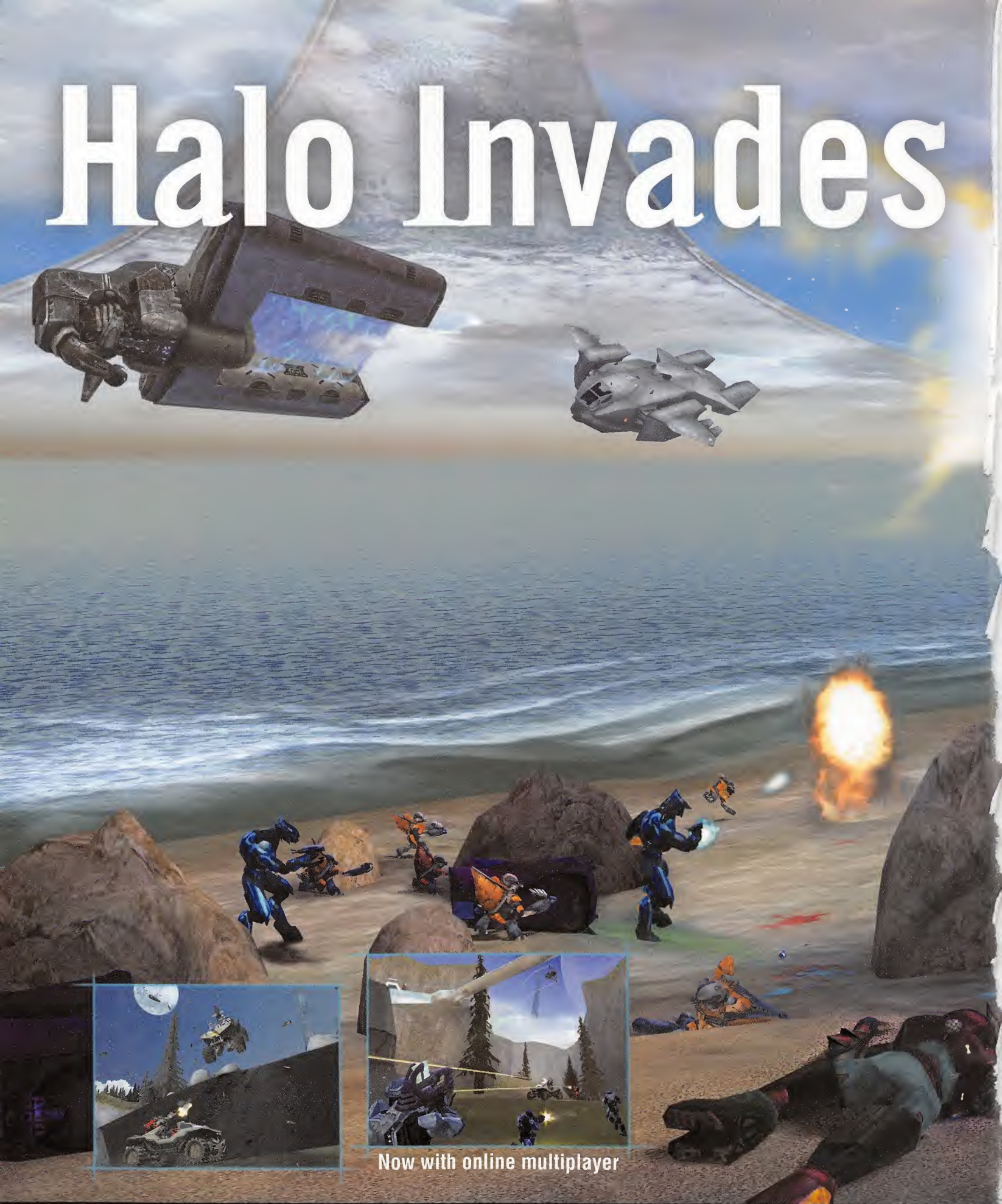


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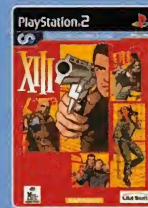
Hardware Online Arena



Gran Turismo 4



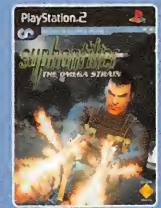
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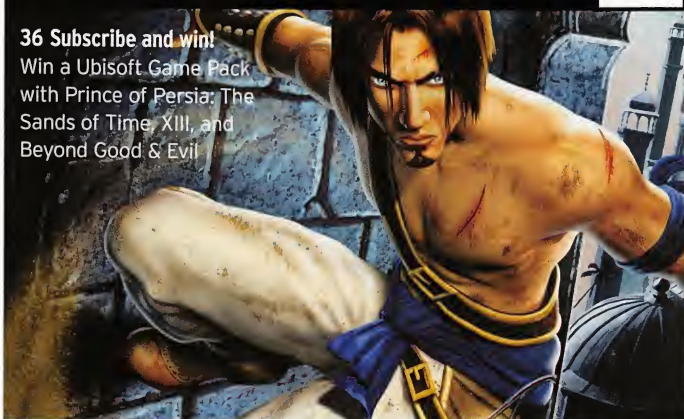


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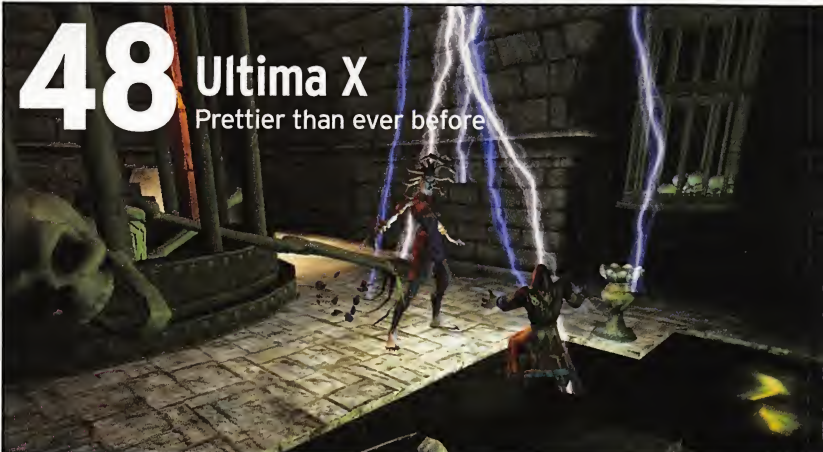
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Deus Ex 2: Invisible War; need we say more?



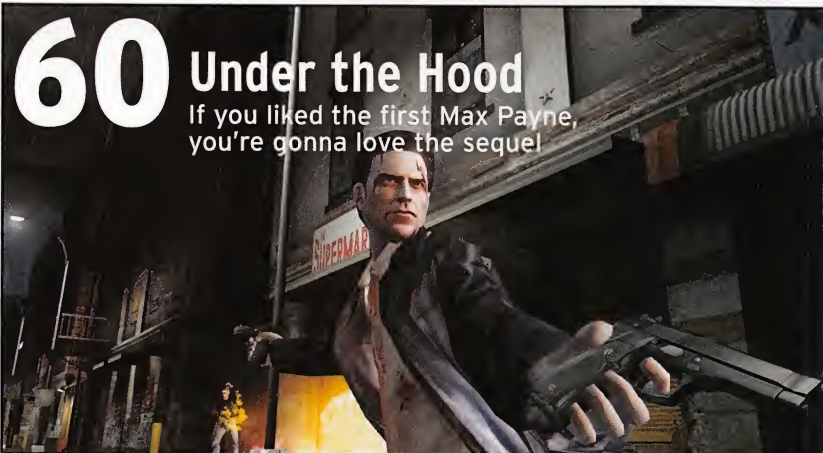
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I made Kev look small.



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# Let's talk about Ex

Warren Spector is a gaming god, to use the cringe-worthy cliché. He's the kind of guy who inspires you to think about games differently. Read any interview with him and you're immediately struck by the sheer scope and potential of this little medium we call interactive entertainment. He's as modest about his achievements as any man with his kind of CV can be. Ultima Underworld, System Shock, Thief, Deus Ex - it reads like a list of critics' favourites. Or indeed, PCPP favourites.

And he loves to talk, as March discovered upon visiting the Ion Storm offices in Austin, Texas. And if the face-to-face interview wasn't enough, then Warren was only happy to oblige with an essay length follow-up email interview. The results from page 38 give a terrific insight into the development process and should serve to get you very excited about the upcoming Deus Ex sequel. And if that doesn't, then DVD purchasers should check out the Invisible War trailer on the disc. It forms the game's opening cinematic and, for any fan of Deus Ex, ought to whet the appetite and leave you begging for more. Hopefully we won't have to wait too long either, with

Warren all but confirming a 2003 release. At least, he's adamant his team is shooting for December, though we've had no official word from Australian distributor, Atari. Fingers crossed anyway.



Of course, as much as I'd love to ramble on about Deus Ex, there's a few other things month you should find to be of interest. I hope you're enjoying the new look in-depth previews, as this issue brings a new instalment in the Ultima saga, as well as looks at the upcoming Prince of Persia and Unreal Tournament 2004. There's also the second in our now regular Under The Hood series, this time focusing attention on the superb technology driving The Fall of Max Payne. I hope you like this somewhat different approach to previewing the big new titles.

And, before I sign off, I just want to wish a fond farewell to Shari Davies, PCPP's eminently talented designer, and Dina Oh, our keen-eyed sub, who are both leaving us this month for pastures new. Good luck girls, you'll both be sorely missed...

**David Wildgoose,**  
Editor  
davidw@next.com.au

## The ones to blame:



**David Wildgoose**  
EDITOR  
"Screw you guys, I'm going to Tokyo!"

Playing: CM4, yet again



**Dina Oh**  
SUB EDITOR  
"Farewell my fine feathered friends"

Playing: Hooky



**Daniel Wilks**  
SENIOR WRITER  
"Life is like a box of chocolates - remarkably similar to frozen shit."

Playing: Temple of Elemental Evil



**Bennett Ring**  
DEPUTY EDITOR  
"For the love of god, when will HL2 review code arrive at the office?!"

Playing: Eve of Destruction 21%



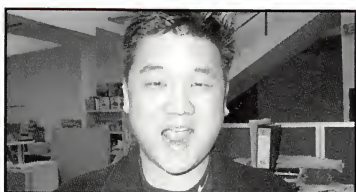
**Shari Davies**  
ART DIRECTOR  
"I love the smell of Napalm in the morning"

Playing: Charity worker in Vietnam



**Timothy C. Best**  
SENIOR WRITER  
"I call this look the Ferrari"

Playing: Barbie's Fun House



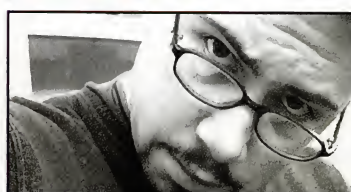
**Amos Hong**  
DISC EDITOR  
"Ahhh, that feels better"

Playing: KOTOR



**Joel Graham**  
ADVERTISING MANAGER  
"I do not have a lazy eye!"

Playing: with himself



**Anthony Fordham**  
SENIOR WRITER  
"Canberra is the pary centre of the universe"

Playing: Myst

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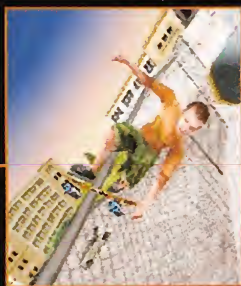
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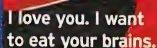
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bonnets of red shiny cars. What is the world coming to, when the fun is slowly being removed from games? Anyway, my point is we will lose an element of gaming that has become a genre all to its own, and don't say you didn't enjoy it.

**SNIPPETS**

big up the drum  
n bass massive  
shout outs to  
da pcpowerplay  
are ya feelin it?

James Loxley

Black Hawk Down, Vietcong, C&C Generals, Enter the Matrix, Devastation, Iron Storm, The Thing and many more. They follow the topic with no story, just a little spice that gets boring after a while. The only games I've can think of that have kick arse story lines that make you want to keep playing are Deus Ex, Neverwinter Nights, Operation Flashpoint, Warcraft series and Half-Life. Noticed how these are critically acclaimed games and don't necessarily have the best graphics but do have the best gameplay. If developers want our hard earned \$100 then they better start thinking about the basic stories of games again.

Patrick Lay

Call me stupid! I paid no attention to two of gaming's commandments and went out and paid \$89.00 for Tomb Raider - Angel of Darkness as reviewed in PCPP# 91. Never, ever buy a game (or most anything really) without reading the PC PowerPlay review first. Never pay full retail price: buy it on ebay or wait a while till it's discounted in store. If only I'd delayed my purchase for another week, but alas, impulse got the best of me. Your (as always) excellent review said it all: don't buy this bug ridden, poorly designed, rushed to market game that earned a FAIL rating. Why did

I do it? What was I thinking of? Maybe I bought it untested review-wise cause I had so much fun with the former games on PSone. Foolish me for trusting previous product and using it as a benchmark for a new purchase. And bugs, there's more than a Mortein ad - unexplained crashes, clipping faults to the max, doors that suddenly can't be opened or worse, rooms that lock you in. Thank you PC PowerPlay, I'll not be breaking the rules again anytime soon.

Fred Marginson

P.S. Anyone want to buy a slightly used, excellent game... going cheap?

[illegible]

**Which is important to you? Brains or brawn?**





## WEIRD OR WHAT

I was just wondering, do chicks play computer games? Recently I found my girl cousin reading my issue of PCPP and she said that it's pretty cool to play games. Is that weird or what? Imagine Carmen Electra and Jenna Jameson playing some Counter-Strike. Now that's a turn on.

Ben Gialouris

## DEAD WRONG

After viewing the Top 100 in PCPP#90, yet again, there's no Silent Hunter II. Being a SH2 player I would of been over the moon even if Silent Hunter 2 got in at #100. But no, it seems the staff at PCPP think this game is not good enough. Well you're dead wrong. Yeah I know being in a sub travelling at 8 knots waiting for something to pop over the horizon is not everyone's cup of tea. I can even understand it scorning in the 70s when you reviewed it two years ago as there were three issues: 1) not great graphics, 2) no multiplayer and 3) not very hard. But, as time went by, this game just gets better and better. Now there's multiplayer where the owners of SH2 can play against owners of Destroyer Command. Then there's the fantastic ACES Kampaighn mod and an awesome realistic sound mod taped from the German movie Das Boot, where you can now hear the crew talking and freaking out when depth charged. All this combined makes SH2 the best WW2 sub sim available today (with the help of modders). If PCPP installed this game with the mods mention above, I think you would agree. Yet I question whether mods are noted in your final list. Did Battlefield 1942 (a great game that

deserved top spot) got to #1 because of Desert Combat or because it is BF1942?

R6kidsmillerav



## MEDIOCRITY THRIVES

As I was looking through the Top 100 names compile last issue, I was disgusted at finding myself fervently flicking pages trying to locate Total Annihilation. In the end I looked at the top ten and smiled in agreement except for the oddities <cough> Age of Mythology <cough>. I believe that Total Annihilation should have easily come into the top 100, but I am unaware of your marking system. Could it be a matter of mediocrity thrives on standardisation? Well, anyway, I'm outraged and I would hope this atrocity can be reversed.

Oliver Dunne



## SNIPPETS

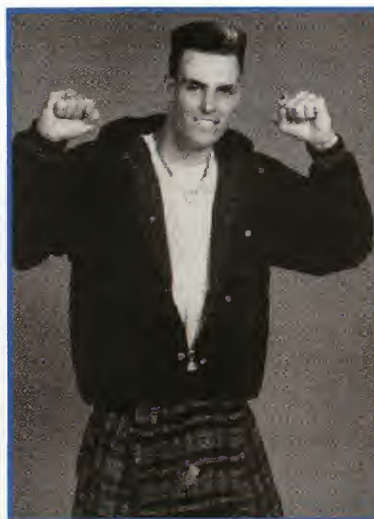


Tomb Raider: an unrealistically unproportional archeologist. Oh, and Age of Mythology is gay-crap.  
Matt Couper

## CHUCKING

yo david waddup i waz just wunderin if u could giv me da email of that guy who made da real gta3 mod caus it waz sick. there is just a few glitches i wanna tell him about, also once i installed the mod gta3 ran reallly slowly like about 3 frames p/s which pisses me off caus i used 2 run gta3 perfectly. i tried turning the draw distance and my graphics down but to no avail. please help me. im running a AMD athlon 1800+ xp a Ge force 4mx, and 128mb of ram so it should run ok but it wont. pls email me back caus i dont know how long ill last b4 chucking my computer out the winow.thanx

nathan shea



Hastings, 1066:  
English oil smithies  
incinerated invading  
forces with vats of  
flaming pitch.



Soon,  
it's your turn.







# Insight

## IBURSTING THE CABLE BUBBLE

### Personal broadband is just a month or so away

Bennett Ring

**I** imagine sitting on the train on the way to work with your laptop, and firing it up for a bit of online Counter-Strike action – complete with a 60ms ping to the server. Once you've had your fix of headshots and spawn campers, you fire up Internet Explorer and start downloading the latest demo at speeds rivaling that of a 1Mbps ADSL connection. And yet you haven't plugged your laptop into some newfangled train-based Net connection that the state railway thought we could do with – it's all done wirelessly in a manner similar to our mobile phone networks. Well imagine no more, as this will be available in December.

Unfortunately you're going to have to be a Sydney-sider to experience this at the end of the year, as that's where Personal Broadband Australia is initially launching the service. Come Christmas time there will be a 100 square kilometre corridor covered by the revolutionary new iBurst service, with a nationwide rollout next year. Rural folk can calm down and go back to milking their cows, as it's not going to hit the outback anytime in the foreseeable future. The plan is to eventually cover 75% of Australia's population, largely in the metropolitan areas.

Based on technology that was

initially developed to help shoot down nukes in the 1980's Star Wars program, iBurst is a wireless Internet service that provides speeds of up to 1Mbps. Yes wireless, yes broadband speeds. Sounds too good to be true? We thought so too, until we managed to scrounge up one of the test kits that iBurst is currently using to beta test the service.

Using a small PCMCIA card the same size as a Wireless LAN card, we had our iBurst kit up and running in a matter of minutes. To our surprise, our first download proceeded at 70KB per second! We then pinged the ISP that was hosting the service, and were amazed to see our packets returned in under 60ms. This first test took place in PBBA's offices, so we were a little sceptical about the results, fearing that the whole place was covered in hidden transmitters.

To make sure we weren't witnessing technical tomfoolery we took the kit back to our office in Redfern and fired it up once again. This time the download speeds weren't quite as impressive, but we couldn't really complain about 35KB per second. That's still faster than a

256kbps ADSL line, and the pings were as good as ever. And remember, the trial is still in beta testing, with only 6 base stations located in NSW – performance will increase by the launch as more base stations go live. Finally we tested the kit in the Sydney CBD, and once again our download speeds were above 30KB per second. By now we were trying to find out how much PBBA stock was selling for, and trying to contact every surviving relative to borrow some cash to invest in the company. Alas, PBBA isn't listed, so we couldn't compromise our journalistic

integrity and get rich in the process.

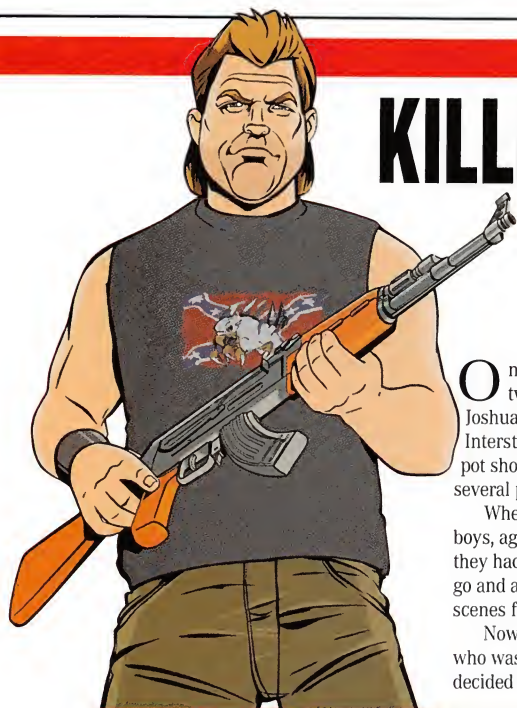
All of this high tech networking wizardry doesn't mean a darn thing if it's priced too high for the average user to afford it. Thankfully PBBA reassured us that it's only going to have a slightly higher price than our current DSL accounts, but time will tell if this proves to be true. When the service is released, you won't be paying your monthly bill to PBBA – they'll be on-selling the technology to several tier 2

ISPs, and it looks as if Ozemail will be one of the first.



Why darling, it's simply beautiful!





# KILLERS FROM GTA3

## US plays the blame game

Anthony Fordham

On June 25th 2003, in Tennessee, two young brothers William and Joshua Buckner, went down to Interstate 40 with a .22 rifle and took pot shots at passing cars, injuring several people and killing one.

When questioned by police, the boys, aged 14 and 16, explained that they had been "bored" and "decided to go and act out one of their favourite scenes from Grand Theft Auto 3."

Now the family of Aaron Hamel, who was killed in the shooting, have decided to sue Take 2 Interactive for

publishing the game, and are also attempting to sue Sony since GTA3 and GTA: Vice City were both originally exclusive PlayStation2 releases.

This latest sorry episode is utterly typical of a situation we've all too readily come to recognise.

Starting most famously with the Columbine school shootings, in which victims families tried to sue, among others, id Software for creating Doom, since then every six to ten months another US youth goes off the deep end and someone tries to blame it on gaming.

While the families are understandably devastated at having a loved-one killed suddenly, and then being told that the motive was boredom and a desire to act out a favourite computer game, perhaps the real fault here is not violent gaming, but the US's obsession with big cash payouts as compensation for murder.



Yellow Sea, 1597:  
Koreans smashed  
enemy flotillas  
with ironclad  
turtle boats.



Soon,  
it's your turn.

## GAME ACADEMY II

### AIE Comes to Vic

Timothy C. Best

The Academy of Interactive Entertainment is busting out of the confines of Canberra and erupting into Melbourne. Instead of fleeing the scene as is usually the case with eruptions, the Victorian Government is actually feeding the fire with a \$150,000 grant.

The second campus will mirror the close ties with industry that formed one of the pillars of the Canberra course. Where the capital city campus was a stone throw from MicroForte, the Melbourne branch will be in the same building as veteran development studio Melbourne House.

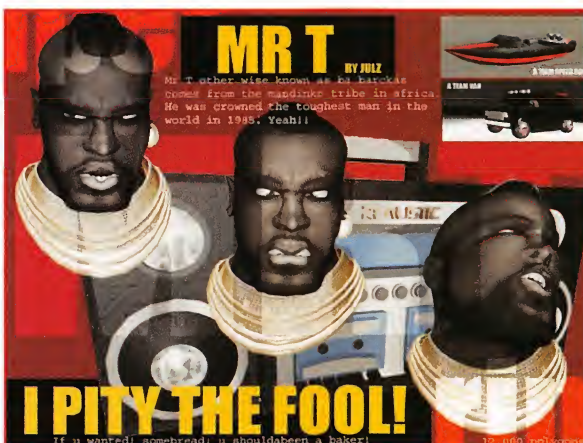
If that weren't enough to insure a healthy grounding in the day to day realities of game development, the head of the Victorian school will be David Giles, the chap who used be the Studio Head of Melbourne House.

The Academy course will come in two 800-hour stages (broken down into 20 hours per week over a year). The first stage is your introduction to 3D modelling and animation (for film and games), while the second year gets into the specifics including games

optimisation, fundamental coding, and even some A.I. work.

People with the appropriate experience can skip the first stage altogether and just get down to the advanced stuff.

The AIE is a non-profit organisation and the money goes into making sure the software and hardware at the Academy keeps up with the brutal industry standard. If you're keen, you're looking at \$8800 for the first year and \$9800 for the next. Giles estimates that 60 to 70 percent of graduates from the Canberra campus have managed to get work in industry so you could do a lot worse and let's face it ... if you have a choice of cafes or politicians it's usually pretty simple.





# GATEWAY TO GAMES

## Players to Prop Up Sales

Timothy C. Best



Quite a nice little package for game-heads

When you looked at the major PC vendors like Dell and Gateway in the past, there were always these super-expensive high-machines that never seemed to have enough RAM or decent video cards. What are you going to use these things for ... tax returns?

Bah, Gateway has finally come out and called a games machine a games machine and brought out the Gateway 700X Gaming PC. The base model comes with a P4 2.8 Ghz, 512Mb DDR RAM, a DVD burner and a massive 160Gb hard drive. The key feature of the system is the 256MB NVIDIA GeForce FX 5900G Ultra video card; the 19" CRT monitor isn't too bad either. The whole thing comes in at \$US2,099 or about \$AU3200.

Gateway has also brought out the monster 700XL, running at 3.2GHz, with over a gig of RAM, two hard-drives coming in at 500Gb, an 18" LCD monitor and the 256Mb GeForce FX 5900G at \$US3500.

For the slightly more budget

conscious there's also the 500XL which still boasts a P2.4Ghz processor and a 128Mb GeForce FX 5200G Ultra card at \$US1,149.99.

The rigs are looking pretty sweet but could have used some case modding. Where are the case fans?

The systems will come with three EA games: Battlefield 1942 and Madden NFL 2004, and Need for Speed: Hot Pursuit 2.

This move follows the example set by Dell overtly targeting gamers.

What's really interesting about this all is the industry's "about time" reaction. All three involved companies (Gateway, EA and Nvidia) saw their stocks rise on the back of the announcement with Gateway gaining eight percent.

I suppose that in the past a lot of people tried to convince themselves they needed their beasts for work, but as gaming becomes more popular it becomes easier to do away with the sham and just admit it's all about the games.



# COPPER IS DEAD

## Now we're finding MIMO

Anthony Fordham

Here at Insight we've always hated wires. Nasty, tangly low-tech things they are, cluttering up our PC workstations, getting chewed by our exotic pets. Fortunately then, Intel has announced that wires - copper wires - are destined for the chop. The hardware megacorp is now focussing on making wireless "the" connection standard.

Intel CTO Pat Gelsinger made the announcement at this year's Intel Developer Forum, and went on to promise that Intel's wireless developments would be integrated into the IEEE standards.

The only problem is current Wi-Fi technology suffers from "lowest common denominator" syndrome, where the network can only run as fast as the slowest device connected to it.

Intel plans to use multiple antennae to boost bandwidth, using a technique called multiple input multiple output (MIMO) which distributes data across a number of channels instead of limiting it to one channel. Better signal processing will

also improve the range of devices.

What this means to us is that the more antennae we add to our network, the higher the total network bandwidth will be. MIMO's core spatial multiplexing technology, which puts the multi-antenna signal back together, also improves reception and eliminates the reliance on line-of-sight connections, since the multiple antennae can pick up signal bounced off objects.

Intel's Gelsinger has promised that MIMO will be integrated into all future Intel-based platforms, from laptops to PDAs.

And where does the death of copper come into all of this? "We can make WLANs so robust, so scalable and so cost-effective that we'll eliminate the need for new copper networks for access points in the future," says Gelsinger.

As Insight currently reports from the middle of a tumbleweed tangle of sixty four different wires, plugs and cords, this sounds good to us.



This is where the big boys get together...



# EXTREME CPU

## We don't need no steenking 64bit

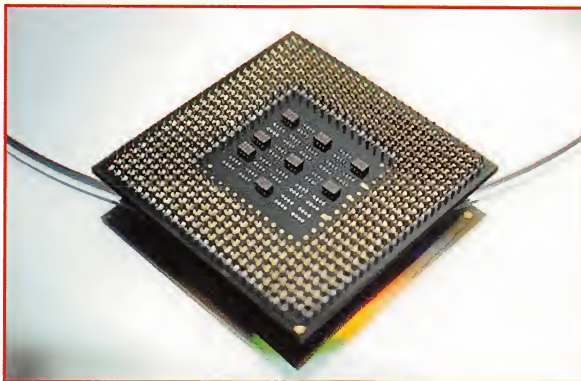
Anthony Fordham

Intel has hit back at the release of the Athlon64 by announcing the next iteration of its venerable Pentium 4 technology - the P4 Extreme Edition.

Aimed squarely at gamers, the CPU will debut at 3.2 GHz and be exactly the same as last year's model except boasting a massive 2MB of L3 cache.

This extra cache is in addition to the 512K of L2 cache and shrewd mental arithmeticians will realise this results in a CPU with 2.5MB of on-die memory. This is the same as the hardcore server-focused Xeon MP core, but runs at 3.2GHz and has an 800MHz FSB.

So in the end you get a CPU with a fairly impressive 169 million transistors, and a considerably large die-size. The chip should be able to 'hide' the latencies associated with accessing main memory, and will hopefully be comparable to AMD's on-die memory controller.



But will transistors and access time alone make the grade or is this new part just a stop-gap measure to, well, stop gamers buying Athlon64?

Obviously, it's far too early to tell, but one thing's for sure - the P4EE won't be cheap. Initial estimates suggest that a ticket of US\$700 is likely to apply.

The new CPU should begin to make its presence felt this month, with some OEM systems being sold. Intel says it won't be shipping boxed CPUs until early next year.

# AURAN JETS

## Next Year's Game Winner

Timothy C. Best

As a celebration of the release version of their game development engine, Auran held a little game design competition with \$100,000 worth of prizes up for grabs. Well, the competition has finally closed and the judges have done their thing.

An evil little title, Battlemyth, from US-based Mergato Studios, has emerged victorious. This is a fully 3D strategy demo in which players take on one another with one of the evil Goblin or Orc armies (with another playable evil army to be added, as well as a non-playable good faction).

Mergato won a commercial license of the game engine (worth \$30,000), two fully tricked out PCs, copies of 3D Studio Max and membership to Discreet's Spark's program, plus six nifty Nvidia videocards, two of which were workstation graphics boards.

The second prize winners were a team from Sweden called WiT Entertainment with their arcade title Zappo (packing amazing colours and neat sound).

Third place went to Aussie Team Binary Storm for their multiplayer strategy game Venefictum.

Auran Jet Industry Relations Manager Andrew Edelsten said that during the judging entrants were only identified by a number to avoid any favouritism.

"When the judges had finalized the

prizes and I translated the numbers to names I was happy to see some local Brisbane guys had got onto the podium," he says.

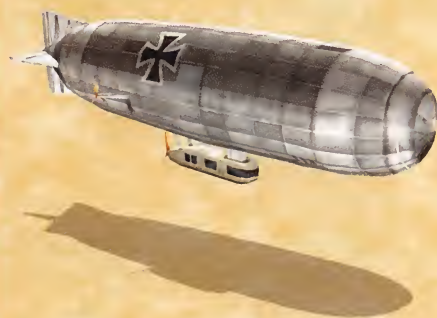
"What's more, the team that made Venefictum were students at QANTM, the local computer games college."

Judging couldn't have been easy with Auran receiving more than 350 entries from 50 countries.

When you are talking about something as complicated as a game demo, having 350 teams assemble and put together entries is a huge accomplishment and it's a testament to both the fine work Auran has done on an accessible games engine and the pull of big prizes. Hopefully, we'll see it all again when Auran Jet 2.0 hits the streets.



London, 1915:  
Germans rained  
destruction on  
English foes  
from Zeppelins.



Soon,  
it's your turn.





# BE THE MASTER CHIEF!

**Your chance to win!**

**D**o you have lightening quick reflexes? A mind hell-bent on strategy? Beat your mates in Halo multiplayer? What if it was in the real world? Are you nodding yes to the first three questions and slobbering at the last?

Thanks to Microsoft, one lucky PCPP reader will win a Heartbreak Ridge Paintball experience worth \$1300 for themselves and 9 of their chums for the release of Halo: Combat Evolved for PC.

The 10 lucky people will receive 700 paintballs each to pound the bejeezes out of each other over 12 battelfields set in over 60 acres of jungles, swamps, bridges, bunkers and trenches that span over 1km. With over 10 years in the businesss, Heartbreak Ridge Paintball is serious about immersion.

And what will sustain me during this gruelling warfare, you ask? A barbeque lunch, of course! But, hey, there's more. More?! Oh, when will this madness end? Possibly after you all receive Halo: Combat Evolved t-shirts.

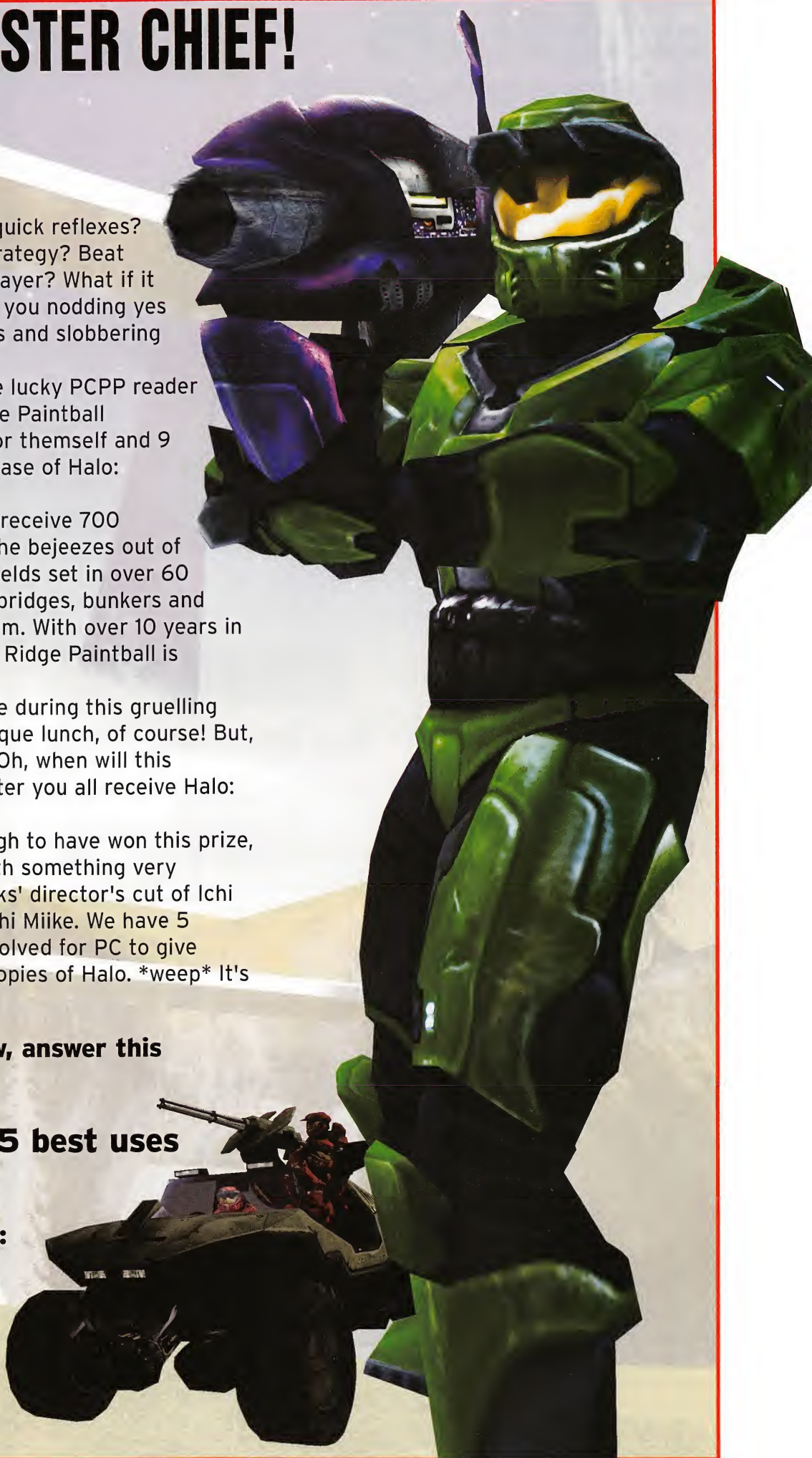
If you're not lucky enough to have won this prize, you can still walk away with something very special. No, not Daniel Wilks' director's cut of Ichi The Killer signed by Takeshi Miike. We have 5 copies of Halo: Combat Evolved for PC to give away. You heard right: 5 copies of Halo. \*weep\* It's all too beautiful.

**To enter into the draw, answer this question:**

**Q. What are the 5 best uses for a halo?**

**Send your answers to:**

**Halo Comp  
PC PowerPlay  
78 Renwick Street  
Redfern  
NSW 2016**





# PHANTOM PHANTOMS

Some say it's real after all, others say it's bollocks

Anthony Fordham

What do you get if you take a PC, rip out the floppy and CD-ROM, hook it to a broadband ISP and use it for nothing but playing games? You get the Phantom, one of the most aptly named console-concepts ever.

Announced in a paper-storm of press releases earlier this year, Phantom was supposed to provide the ultimate solution to the problem of games software piracy by creating a system that gave publishers ultimate control, ISPs more money, and users the ability to never have to leave the house, ever. However, rumours of the Phantom's current status are wildly contradictory. While some seem to think it's a real, viable platform that will be with us in months, others have instead taken a close-up investigative look at the people actually running Infinium Labs, the developer of the Phantom.

Or should that be alleged developer of the Phantom? It seems that Timothy Roberts, the CEO of Infinium, is famous



less for a lifetime dedicated to building gaming technology, and more for a lifetime of starting businesses and running them into the ground.

What's more, his CV lists him as a Director of a bunch of different companies run by his family members who, despite being his family members, can never seem to remember whether or not he actually works for them. The revelations were made by overclocking enthusiast site [H]ard|OCP (we use their fine UT2K3 benchmarking utility) which went to some lengths to try and track down something, anything, definite about Phantom. Eventually they arrived at a strip mall address with a bunch of empty offices and a PO Box leased by Infinium. That was all.

## THE FEEL OF LEATHER

Coming to a Mouse Near You

Timothy C. Best

Okay, Microsoft has a new bunch of mice and some keyboards coming out ... big whoops, right? Wrong! These puppies are coming in black leather.

Just look at Matrix, Blade or Underworld ... it's all about the leather, baby. It's actually faux leather, but that's really better isn't it? The new mouse features aren't too bad either.

For one, Microsoft has designed a tilting mouse wheel so you can scroll horizontally as well as vertically. That's not the only change: clicking the new wheel now jumps between applications, and now instead of scrolling three lines each turn, the more times you spin the wheel the further you jump forward. For the two wireless offerings, MS has bumped up the number of transmission codes from 1000 to 65,000 to cut down on interference and it has upped the battery life from six weeks to six months (which is a big step in the right direction).

The three new mice are: the Intellimouse Explorer, the Wireless Intellimouse Explorer and the ambidextrous, and imaginatively named, Wireless Optical Mouse. Microsoft knows that if you have your mouse wrapped in the comfort of leather you'll probably want a keyboard to match so it's bringing out a few neat little bundles. On the high end, in addition to keys that jump to Microsoft

applications, there will also be five programmable keys. Just open the application the normal way and then hit one of the preset buttons and it will be assigned. Think of it like programming a car radio. The mice will retail for between \$59.95 and \$99.95 and the first ones should be out by late October with the more interesting colours (like metallic blue and periwinkle) due in November. The mice and keyboard bundles should be a little later with the leather-clad high-end number costing around the \$229.95 mark.



No animals  
were hurt in the  
making of this  
mouse

From the Middle Ages  
to WWII, command  
the deepest  
RTS in history.



EMPIRES  
DAWN OF THE MODERN WORLD

950 A.D. — 1950 A.D.

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From Rick Goodman,  
lead designer of Age of Empires®  
and Empire Earth™.

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PC  
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M15+  
MEDIUM LEVEL  
ANIMATED VIOLENCE

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# WTF IS STEPPING?

## Hard k0re Overclockers live by it

Stuart Calvin

Hard k0re Overclockers live and die by the obscure code found stamped onto their CPUs. Have you ever been tempted? Ever bumped up the Front Side Bus one night and spent the next day reinstalling the operating system? Or just disappointed that the old 1.4 T-Bird only got to 1.401GHz even though it was cooled by a D-Teck Spir@l waterblock and Chevette radiator? Most people, when confronted with these situations, conclude that they were simply unlucky or stupid. They may also assume that their processor was hacked from a limestone quarry instead of being carved out of living ivory by the hand of g0d. Maybe their processor, wherever it was fabbed, would've definitely cut the mustard, if it was actually made in Silicon Valley or some other cool place. In the distant days of 0.35µ and 0.25µ fabrication technologies and probably 0.18µ as well, this line of thinking might have been valid. However, with 0.13µ technology the standard, and the nascent 0.09µ process looming, it just doesn't come down to luck or the quality of the fabrication anymore. You can find out a great deal about a processor's limitations or potential and make a considered estimate of how far you will successfully O/C it, before you even buy it.

### Please explain

Throughout the term of a processor life cycle the processor will go through several steppings or versions. Stepping simply refers to revisions in die or core design made by processor

manufacturers. Every stepping indicates a change in the CPU manufacturing process, which usually has an impact on physical characteristics, such as the maximum temperature and wattage of the CPU, pipeline depth, core voltage, transistor arrangement, silicon layers or a myriad of other things. Intel initially pulled 2000MHz with 0.18µ technology on a "D0" stepping. This stepping started at 1500MHz, but never broke through 2GHz. To go faster, Intel moved to the 0.13µ process and a new stepping - several in fact - before topping out at 2.60GHz. The message here is that some CPUs have little or no overhead left at some point in the manufacturing process. In other words, a change in the stepping of a processor represents a significant change in its constraints and newer steppings typically have some type of improvement over previous steppings.

### Intel

The Pentium 4 "2.4C" CPU is known to be h0t for overclocking, but why? As of late 2003 there are three 2.4C Pentium CPUs. The h0t model has the "D1" stepping also used by the 3.20GHz/800MHz processor, so any low-end D1 stepping CPU could be expected to O/C somewhere around the fastest CPU with that stepping. The 2.4Cs, in order of release, are cryptically described by Intel as the SL6WF / D1 / 0F29; the SL6WR / D1 / 0F29; and the SL6Z3 / M0 / 0F25. The first five-character string is the sSpec or specification number that is printed on the processor and used to uniquely identify it. By knowing the processor's sSpec, you can find out the processor's core speed, cache size and speed, core voltage, maximum operating temperature and more. The first string of alpha-numerics represents the CPU frequency, Cache, bus speed in MHz and voltage. It's the second row where you'll

find the sSpec. The "0F29" represents the CPU Identification string or just CPUID from which steppings are identified. The first character is typically a 0 and the second and third characters represent the family and model number. The fourth character represents the processor stepping. For example, if you find one processor with a CPUID String of 0F29 and a second processor with a CPUID String of 0F25, such is the case with the 2.4C, both processors have the same family and model number of 0F2, but different steppings. 0F2, in fact means Pentium 4 processor with 512-KB L2 cache on 0.13µ process and the last number is the stepping. It would be hard not to pick up the right 2.4C as the SL6WR and M0 stepping model don't seem to be publicly available. There's more to the D1 stepping than just the 2.4C CPU. The D1 Stepping of the 0F29 family started with the 1.80GHz/400MHz processor; and the 13µ process started on the B0 0F24 1.60GHz/400MHz CPU. The D1 Stepping has moved from 1.80GHz/400MHz through 2.40GHz/533MHz all the way to 3.20GHz/800MHz. This silicon wafer is one tough puppy. The 2.4C/800MHz also got HyperThreading which tells

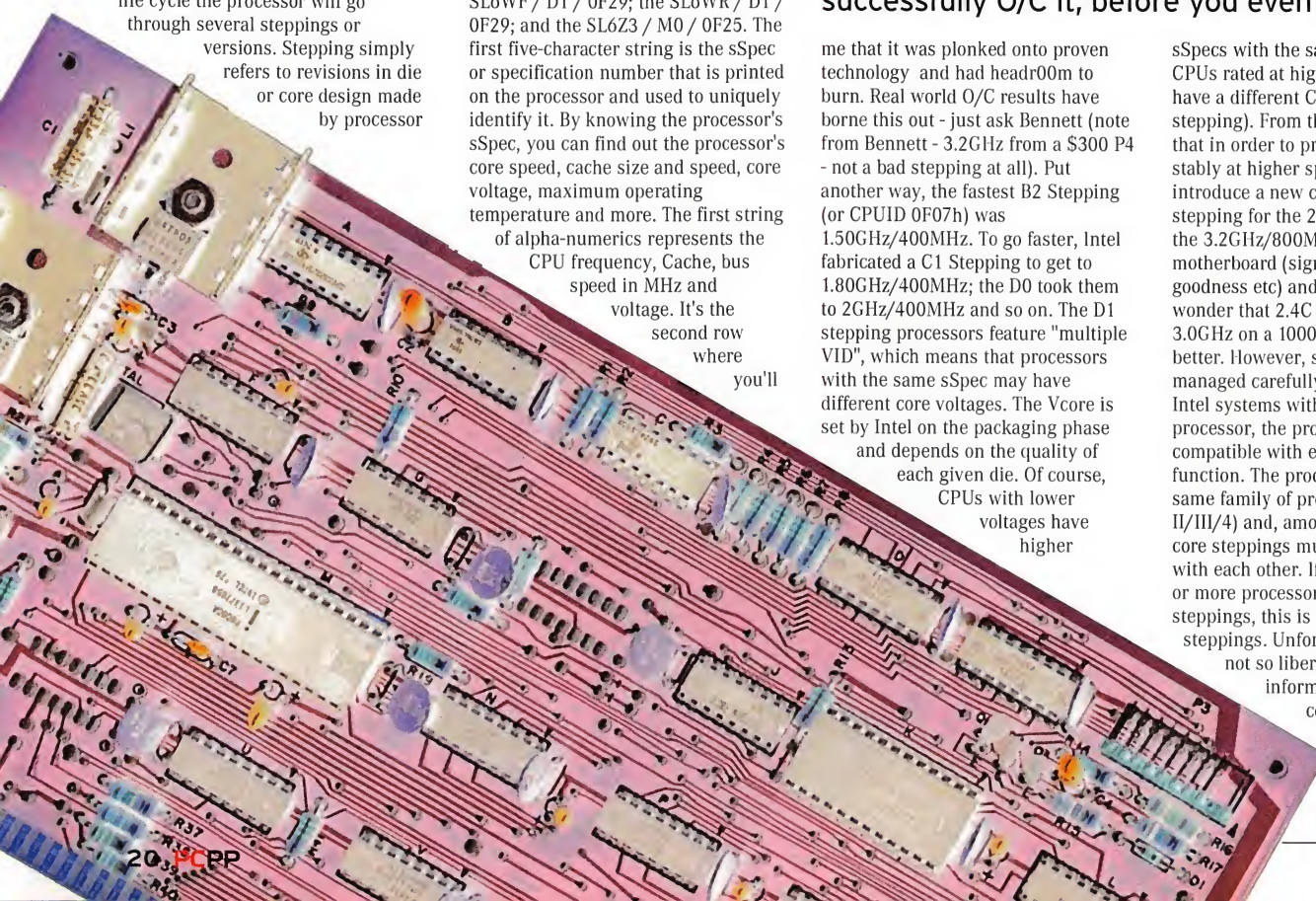
overclocking potential. On launching those processors supporting the 800MHz bus, Intel announced a new approach to the CPU voltage formation. They won't set a fixed voltage, but will suggest a range of voltages. During the production stage all processors are divided into four classes. Each class has a certain voltage from 1.475 to 1.55V, depending on the die quality. Of course, models with the lowest core voltage are the most interesting for overclockers as they have the greatest potential. However, there is no marking on the processor telling its voltage, so you can't know the voltage until you install the CPU into the mainboard.

This investigative process works for all Pentium and Celeron CPUs. Find your own CPUID using the WCPUID utility from H. Oda! (Google is your friend) or read the sSpec. Open up <http://processorfinder.intel.com/scripts/default.asp> and <http://developer.intel.com/design/pentium4/specupdt/249199.htm>. Look for your CPUID and scan the chart to see what the highest rated clock speed is for that CPUID. If you're lucky, you should find that the highest speed is somewhat above your rated speed. In fact, there should be several different

**You can find out a great deal about a processor's limitations or potential and make a considered estimate of how far you will successfully O/C it, before you even buy it**

me that it was plonked onto proven technology and had headr00m to burn. Real world O/C results have borne this out - just ask Bennett (note from Bennett - 3.2GHz from a \$300 P4 - not a bad stepping at all). Put another way, the fastest B2 Stepping (or CPUID 0F07h) was 1.50GHz/400MHz. To go faster, Intel fabricated a C1 Stepping to get to 1.80GHz/400MHz; the D0 took them to 2GHz/400MHz and so on. The D1 stepping processors feature "multiple VID", which means that processors with the same sSpec may have different core voltages. The Vcore is set by Intel on the packaging phase and depends on the quality of each given die. Of course, CPUs with lower voltages have higher

sSpecs with the same CPUID. Some CPUs rated at higher clock speeds have a different CPUID (and core stepping). From this we can assume that in order to produce chips running stably at higher speeds, Intel had to introduce a new core stepping. The stepping for the 2.4C is the same as the 3.2GHz/800MHz. With the right motherboard (signalling, electronic goodness etc) and cooling it's no wonder that 2.4C owners are at 3.0GHz on a 1000Mhz frontside bus or better. However, steppings need to be managed carefully. When running Intel systems with more than one processor, the processors must be compatible with each other to function. The processors must be the same family of processor (Pentium II/III/4) and, among other things, the core steppings must be compatible with each other. If you are using two or more processors with different steppings, this is known as mixed steppings. Unfortunately, AMD is not so liberal with stepping information. While both companies have filled various documents to the brim with handy information, Intel





tends to focus out key processor information onto specific web pages but it is relatively easy to identify the CPU. Useful stuff like actual frequencies, Vcore, currents and wattage, max temperatures and the like, are listed by AMD in one document but not the CPUID or the actual steppings.

## AMD

It's not too hard to determine an AMD CPU stepping. The problem is knowing what to actually do with it! In this case, some background explanation will help set the scene. The Thoroughbred processor is the .13µ process Athlon. The first version of the Thoroughbred used eight metal layers up from seven over the Palomino and six on the Thunderbird cores. Now there's two flavours of the Thoroughbred core, the first hot-running and not-very-scalable Thoroughbred-A and the cooler and higher-clocking Thoroughbred-B. To the eyeball, the "B" core is slightly larger due to a new layout designed to improve scalability and pipeline execution. There's also 400,000 additional transistors designed to, among other things, reduce EMI according to people who apparently know these things. As well, a ninth layer of silicon was added to the processor, up from 8 in the Thoroughbred-A core. That's two significant changes that should carve out more headroom, for the Thoroughbred-B.

Do you feel lucky? There's two ways to buy a CPU, either over a website, or in person. Websites rarely list CPUs by stepping code let alone sSpec or CPUID. They are, however, likely to list the AMD processor OPN. That's the Ordering Part Number for us weenies. So long as we have all these different type processors around, you should avoid ordering from any place that doesn't have the OPN listed along side the processor. If you do, you could well end up with a Palomino when you expected to get a Thoroughbred, or get a Thoroughbred-A when you expected a Thoroughbred-B. These days how would you know if your super-cheap 3000+ Barton was a 2167GHz/333MHz or the 2100MHz/400MHz model? The OPN tells a LOT about the CPU (google + AMD and OPN is your friend).

Let's take a look at the three Athlon XP 2600+ processors by way of example. Their OPNs are AXDA2600DKV4D, AXDA2600DKV3D and AXDA2600DKV3C. The "AXDA"

bit identifies Athlon

Thoroughbreds and Bartons; the "2600" is the Quantispeed and the "DKVnX" tells us:

AXDA2600DKV4D: D= Package Type; AXDA2600DKV4D: K= Voltage; AXDA2600DKV4D: V= Maximum temperature; AXDA2600DKV4D: 4=L2 cache size; AXDA2600DKV4D: D=FSB Speed. Package Type: OPGA ( boring pin-out stuff); Voltage: L: 1.50V U: 1.60V K: 1.65V M: 1.75V; TMax: T: 90 V: 85 ; L2 Cache: 3: 256KB 4: 512KB; FSB: C: Palomino and 266MHz Thoroughbred B (Model 6/8) D: 333MHz Thoroughbred and Barton (Model 8/10) E: 400MHz Barton (Model 10). In essence, there's a 266MHz FSB Thoroughbred-A, a 333MHz FSB Thoroughbred-A and a 333MHz FSB Barton - big differences. Once you have a handle on the OPN it's time to examine the actual stepping. The stepping code for AMD CPUs is a four or five letter string printed on the CPU either on the core (Durons, Athlons and Athlon XPs with Palomino core), or on a black label near the core (Athlon XP Thoroughbred or Barton cores). The first four numbers after the 'stepping code' refers to the manufacturing year and week of the year so you'll find forums around the web talking about a "2003, week 31, XP 2700+ that rocks at 2900MHz" (versus a stock 2167MHz). Very briefly, if your stepping code is one of: AIRCA < AIRDA < AIRGA < RIRGA < RIWGA < RIUGA < AIUGA < AJUGA, then you have a Thoroughbred-A. You have a B Model if you can recognise any of these codes: 1600+ KIUHB < JIUHB 1700+ and 1800+ JIUCB < JIUGB < KIUHB < JIUHB, over 2000+ AIUAB < AIUCB < AIUGB < AIUHB. Bartons are running the series AIUAA < AQUCA < AQXDA < AQXEA < AQZEA. In nearly all cases, the earlier steppings equate to better overclockability although there are gems in and to either side of the middle. As all Palominos have a default voltage of 1.75V, so all Palominos have a voltage code of "M" in the OPN. Thoroughbred-As have a default range of 1.50-1.65V. Thoroughbred-Bs have a default range

of 1.60V-1.65V. You can identify which type of Thoroughbred it is by looking at the code that begins the second line of coding on the processor. If you see a code like "AIUHB" that begins with the letter "A," that's a high-end Thoroughbred-B. If you see a code like "JIUCB" that begins with the letter "J," that's a low-end Thoroughbred-B. Apparently the Thoroughbred-B core stepping of AIUHB is not too bad and the Thoroughbred B core stepping JIUBH is just "so". The XP 1700+ to 2000+ CPUs are available in both steppings so it pays to check the stepping code as well as the OPN since the A series has more headroom than a J model. How the codes translate in real life with real chips at each Quantispeed is complex. Take the 1800+: If the code is AX1800DMT3C, that's a Palomino. If the code is AXDA1800DLT3C, that's a Thoroughbred-A but from early March 2003 there appeared some 1.5V Thoroughbred-Bs with the same code. All Thoroughbred-As have a stepping code which ends in "A," like "AIUGA." All Thoroughbred-Bs have a stepping code which ends in "B," like "AIUGB." If the website you're ordering from shows an order code of AXDA1700DUT3C, that's a Thoroughbred B. That's not all for that 1800+, the template varies throughout the CPU range, and it's not documented in any public material from AMD! Moreover, there are other CPUs with just as complex nomenclature.

There are those AMD processors, as you've noticed, whose codes start with the letter "A." and there are those that don't. For example, there are AIRGAs and there are also RIRGAs. Up to now, those AMD CPUs whose code starts with a letter other than "A" have not performed as well as those with start with an "A". So RIRGAs do

worse than AIRGAs. The first low-speed Thoroughbred-Bs have codes like JIUCB and JIUGB, and generally they don't do as well as the Thoroughbred-Bs whose code does begin with "A". If all else fails, WCPUID by H. Oda! will display a Family/Model/Stepping ID of 680 for Thoroughbred-As and 681 for Thoroughbred-Bs.

Bartons are all "A" cores. The FSB can be determined by the third letter with the last two letters being xA: AQUCA, U = 333FSB and AQXCA, X = 400FSB Apparently Bartons are overclocking quite well. In fact, the AQXEA stepping 'Greenchip' Barton 2500+ cores are actually an underclocked XP 3000+ of the same stepping! Very cool - aren't you glad you read this magazine? But despite this fact the 1467MHz XP1700+ DLT3C JIUHB CPU (with some dual channel OCZ EL 3500) apparently gets you a LONG way on less money. These CPUs will run all the way up to 2.50GHz on air cooling and will out-perform some overclocked 2500+ Bartons. RAM like the OCZ will also run 2,2,2,5 timings as fast as you like quite easily. Why the 1700+ DLTC and not the DMT3C? Because the DLTC runs at a stock 1.50V while the Thoroughbred-B DMT3C is near-maxed at 1.75V. Your chosen CPU must have voltage headroom if it hasn't become apparent to you by now. Considering one CPU can cost as much as another, it pays to do a little research and get some max-headroom. Once you know your AMD stepping code - Google!



**WIN!**



## 5 COPIES OF CHROME

Thanks to Take 2 Interactive, we have five copies of Chrome to give away. Lauded as something of a FPS with elements of RPG that is a visually tasty treat. The game is set in a world where implants to enhance physical abilities has made chrome precious, and you, as Logan, the mercenary, must do all you can to get the metal.

**Q. Name a car that uses chrome**

Chrome Competition  
PC PowerPlay  
78 Renwick St  
Redfern NSW 2016

THE TAKE-2 INTERACTIVE

# COMPETITION PAGE!

**WIN!**



Thanks to Take 2 Interactive, we have five copies of Space Colony to give away. A game inspired by The Sims, but developed to be punchier, crazier and funnier. Try to keep the colony running with a motley crew of misfits with personalities that will either set your teeth on edge or laughing hard.

To win, answer this question on the back of an envelope:

**Q. What would you name your space colony?**

Space Colony Comp  
PC PowerPlay  
78 Renwick St  
Redfern NSW 2016

## 5 COPIES OF SPACE COLONY

**WIN!**

## 5 COPIES OF HIDDEN & DANGEROUS 2

Thanks to Take 2 Interactive, we have five copies of Hidden & Dangerous 2 to give away. Set in locales around the world, from African deserts to humid jungles in Burma, you will have to complete more than 20 complex and covert missions over nine different campaigns. Start sweating. To win, answer this question on the back of an envelope:

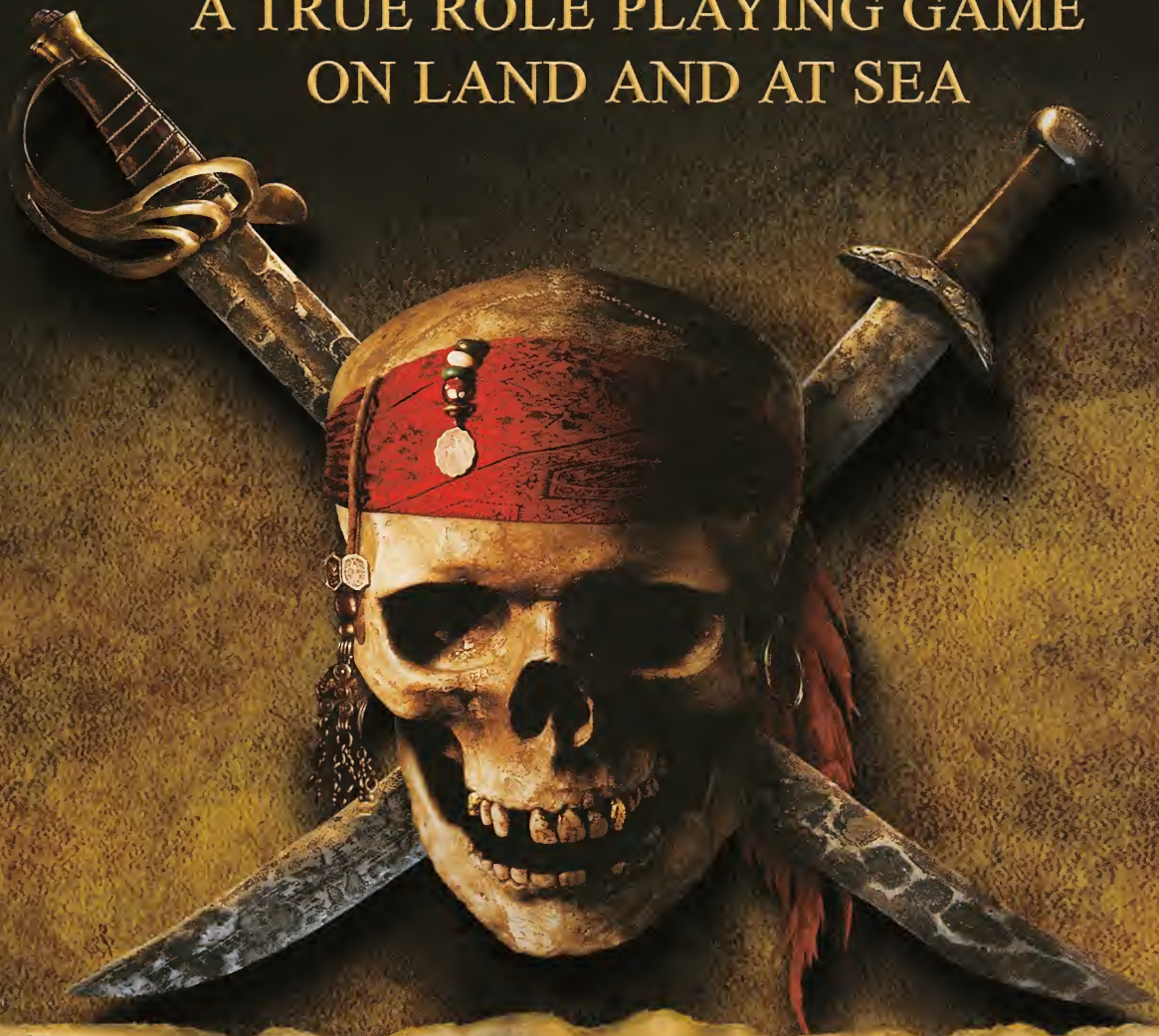
**Q. What is dangerous and hides under dunny seats?**

Hidden & Dangerous 2 Comp  
PC PowerPlay  
78 Renwick St  
Redfern NSW 2016





A TRUE ROLE PLAYING GAME  
ON LAND AND AT SEA



# PIRATES *of the* CARIBBEAN



INTENSE  
AND EXCITING  
NAVAL BATTLES



HIRE OFFICERS  
TO IMPROVE YOUR  
SKILLS, ACCOMPANY  
YOU WHILE  
EXPLORING ON LAND,  
AND EVEN FIGHT  
WITH YOU



REALISTIC WIND  
AND WEATHER  
EFFECTS, INCLUDING  
STORMS AND EVEN  
WATERSPOUTS



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# CALL OF DUTY



## 4 CALL OF DUTY PRIZE PACKS

Thanks to Activision, we have four copies of the hottest shooter of the year, Call of Duty, to give away. Not only will each winner receive a copy of the game, but they'll also get a spiffy poster and Call of Duty military patch to wear. To win, answer this question on the back of an envelope:

**Q. Call of Duty is ten times more intense than what other military shooter?**

Call of Duty Comp  
PC PowerPlay  
78 Renwick St  
Redfern NSW 2016

MAN WHO GO TO BED WITH  
ITCHY BOTTOM WAKE UP WITH  
SMELLY FINGER.  
IT IS SO.

THE TIRESOMELY NAMED

# COMPETITION PAGE!

WITH DIVINE PEARLS OF WISDOM



YOU MIGHT WIN. YOU MIGHT  
NOT. BUT YOU'LL NEVER  
KNOW UNLESS YOU ENTER -  
OR UNLESS YOU'RE PSYCHIC.

## WINNERS!

### PCPP#91 CENTURY OF FLIGHT

Lucas Rye, WA  
Jason New, NSW  
Kane McGovern, TAS  
David Rimmington, SA  
Shane Drobnick, NSW  
Allan Cassidy, NSW

### PCPP#91 PIRATES

James Scott, SA  
R. Meier, NSW  
Drew Higgins, SA  
M. McKibbin, ACT  
Boris Pupacic, NSW  
J. Dymock, NSW

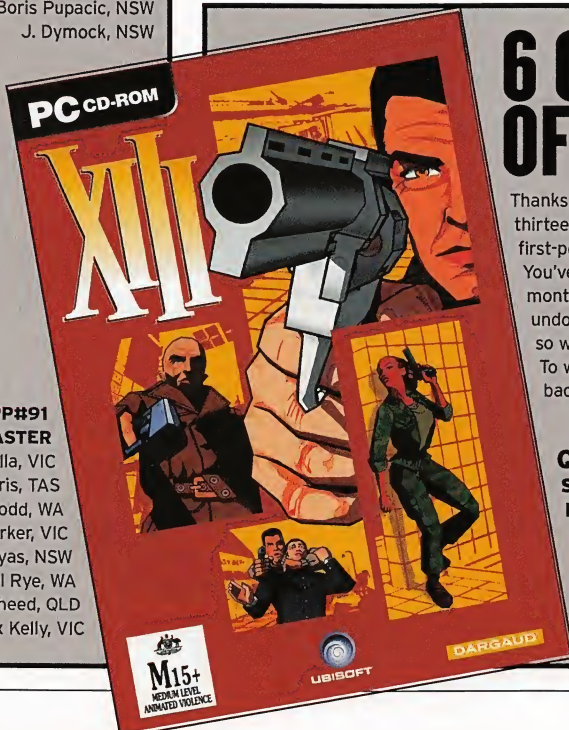
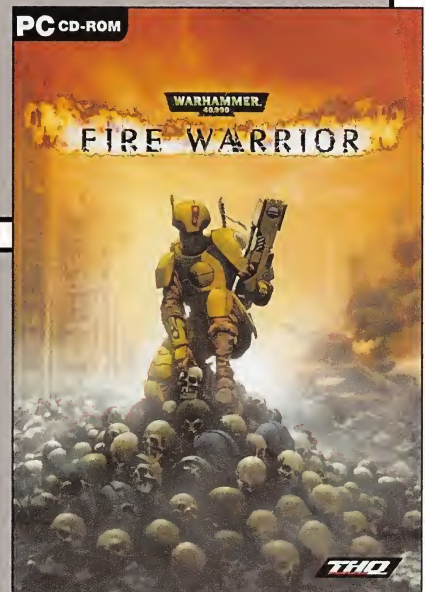
YOU CAN ENTER THIS COMPETITION  
IF YOU THINK YOU CAN. OR NOT.

Thanks to THQ, we have five copies of the upcoming WarHammer 40K shooter, Firewarrior, to give away. Based on the massively popular Games Workshop tabletop game, Firewarrior is a sci-fi blast 'em up of singular style and packs a visceral punch. To win, answer this question on the back of an envelope:

**Q. What race is the main character from Firewarrior?**

Firewarrior Comp  
PC PowerPlay  
78 Renwick St  
Redfern NSW 2016

## 4 COPIES OF FIRE WARRIOR!



## 6 COPIES OF XIII

Thanks to Ubisoft, we have six - not thirteen - copies of the super stylish first-person shooter, XIII, to give away. You've played the demo on last month's coverdisc, so you undoubtedly know how cool XIII is, so we'll shut up already. To win, answer this question on the back of an envelope:

**Q. What's the significance of the name XIII?**

XIII Comp  
PC PowerPlay  
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### PCPP#91 THRUSTMASTER

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# HOTWARE

All the bits that we cram in at the last moment with Anthony Fordham

## MINITAR 5-PORT GIGABIT SWITCH

Price: \$179 Distributor: PC Range Contact: [www.pcrange.biz](http://www.pcrange.biz)

Gigabit Ethernet ports are now de rigueur on all expensive motherboards such as the ABIT IC7-G featured in recent Beasts, but few folks at home can take advantage of this ultra-fast standard with their crusty old 10/100 switches and hubs. Enter Minitar with a proven track record in networking gear, and a rather nicely

affordable 5-port gigabit switch. Plug your various gigabit enabled PCs into this thing and you will be exchanging data at a truly ridiculous rate - perfect for exchanging extensive MP3 collections. Not that we'd encourage that sort of evil behaviour, of course. There's also an 8-port model and many



retailers are offering bundles that include two gigabit ethernet cards for older PCs that aren't lucky enough to have the fat new pipes built in.

## COOLERMMASTER AEROGATE II

Price: \$84 Distributor: PC Case Gear Contact: [www.pccasegear.com](http://www.pccasegear.com)

Another month, another 5.25 inch rheobus to make the front of your PC look less like an ugly-arse PC and more like an ugly-arse \$300 all-in-one stereo. This is the latest from CoolerMaster and features the requisite blue backlighting, but a bigger screen and funkier styling (so they say). It can handle the control of four fans and has seven different LCD colours so you can choose the most complimentary scheme for your ultra-modded PC, or even have the whole thing cycle in an eye-blistering demo mode for maximum disco-ness or, as CoolerMaster puts it, "ultimate viewing pleasure". Meanwhile, the rather nifty jog wheel allows for what CoolerMaster calls "single finger operation". Lord knows what they think you're doing with the other nine.



## GARMIN GPS III PLUS

Price: \$750 Distributor: Garmin Contact: [www.garmin.com](http://www.garmin.com)



Why is this GPS so cool? Because you can mount it on your motorcycle and be hard and nerdy all at once. Never get lost again as you tool along the highways in your aggressively choppered Harley picking up beautiful blonde 70s-style hitchhikers. Impress your pillion rider with your effortless

command of the streets. This twelve-channel GPS tracks 12 satellites at once, so you can even ride rough and the vibration won't lose the signal. Includes every function known to GPS-man, including compass, street maps and memory for preset destinations. Skull belt buckle and long crazy beard not included.

## SUUNTO S6 SKICHRONO

Price: \$600 Distributor: Suunto Contact: [www.suunto.com](http://www.suunto.com)

What's the only bad thing about skiing? Having to leave the majority of your PC enabled toys behind in the car, because they're mostly just not relevant on the slopes. Enter the Suunto S6. This is not a watch. It may look like a watch, but does your current watch include an altimeter? Does it have an ultra-accurate electronic compass?

Will it keep you updated on barometric pressure so you know when the blizzards are about to close in? Does it track your rate of descent, remember how far and fast you've travelled and download the whole lot into the PC with included software to add happy snaps and notes? This watch does.

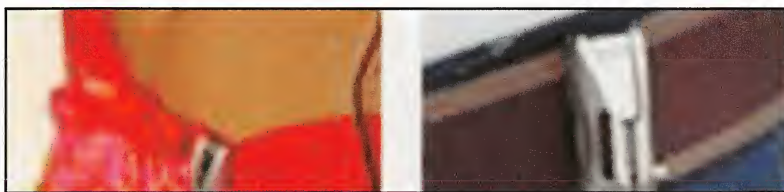




## COOLPC GEEK CLOTHES

Price: Varies Distributor: CoolPC Contact: [www.coolpc.com.au](http://www.coolpc.com.au)

Don't you just hate the way most non-PC gamers can't tell that your albino complexion is actually a sign that you're a hardcore geek? Well, now you can tell the whole world about the fact that you don't have a life. Obviously taking inspiration from the almighty ThinkGeek crew, CoolPC has released its very own range of designer nerd threads, but due to their being made in Australia, the CoolPC range is around half the price of ThinkGeek's. We can't help but notice the CoolPC designer dude tends to have an unhealthy obsession with the word Root (although we're pretty sure he means it in the context of a Unix admin, rather than one of those wooden bits under trees).



## RIVET MICRO FASTENING SYSTEM

Price: Varies Distributor: Rivet Contact: [www.rivetequipped.com](http://www.rivetequipped.com)

Continuing the theme of geek clothing and personal attire is the Rivet Micro Fastening system. This cool little metal clip will attach your funky new mobile phone to your belt, and enable you to answer your phone in the same way gunslingers go for the draw. Now, of course, you'll have to be the type of person who likes to wear their phone on the outside, but if you fit this bill you'll probably find this fastening system much sexier than the cheap plastic case your mobile phone arrived in.



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# CINEMAWARE

For when you want to  
watch instead of play...

## About Schmid

**Distributor:** Roadshow **Classification:** M15+



I just kept waiting for this one to be funny! Advertised as a dark comedy the critics have raved, shouting out "brilliant", "stunning" and who weekly even harped "perfectly crafted" but I just kept waiting for the misery of these lives to show some light at the end of the tunnel. There are moments when

Nicholson surprises us with dry stories of his life but they are ingrained in pain and fear not the motions of a good laugh. I love black comedy; they appeal to me for too many reasons to list but at the end of this film all I wanted was a drink and to ensure I never end up alone. **VM**

## Magic of the FA Cup

**Distributor:** ABC **Classification:** E



Granted there is a serious lack of Fulham antics on these disc's, but seeing as they really haven't achieved much in, well lets just say a few years I am willing to put these misgivings aside. This is an amazing 254 minute football spectacular of goals, games and greats. It has all the

faces we have come to love to hate and many of the Beckham hairstyles. The FA cup often inspires clubs to lift and the 7 matches picked from the last 16 years of the championship are by far the most remembered. There are only positives to be gained from purchasing football history. **VM**

## The Experiment (German)

**Distributor:** AV Channel **Classification:** MA



Loosely based on the infamous 1971 Stanford Prison Experiment in which college students were randomly assigned roles as "prisoner" or "guard" in a mock prison, The Experiment updates the story to modern day Germany. This shadowy movie is set up as a

thriller, but unfortunately by the closing credits the claustrophobia is likely to evoke a reaction more appropriate for a well-planned horror. You are possibly not human if you don't finish this film with a heavy nothingness in the pit of your stomach. This is dark. **VM**

## Doctor Who 40th Anniversary

**Distributor:** ABC **Classification:** PG

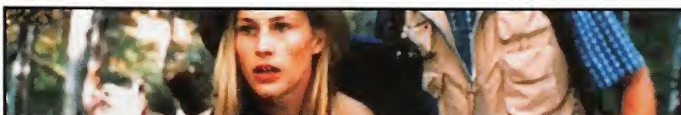


For unknown reasons I was never a fan of Doctor Who. What is not to love? The ingenuity of the writers to keep this man travelling around in search of danger and dodgy special effects. Maybe my TV schedule was full back then but these days I was so happy to see the DVD appear on

my desk for review. With extras a plenty, you can't go past the 1982 BBC review of the series most memorable monsters. You gotta love monsters. Earthshock stars Peter Davison (the 5th doc) and is a great flash back for some, and a new love for others. **VM**

## Human Nature

**Distributor:** Magna Pacific **Classification:** MA15+



Why is it films feel the need to break into song at the least predictable moment? Surely some warning that noise from an actor with dreams of a singing career should be listed on the cover. Well I have taken it upon myself to shout out. Patricia Arquette should stick to

acting, mainly in minor roles. Pushing that image aside, along with the image of her naked and very hairy, Human Nature is witty laugh out loud material mostly due to Rhys Ifans as the leg humping would be ape who reforms himself purely to get a bit of skirt. **VM**

## The Series Two Young Ones

**Distributor:** ABC **Classification:** PG



It is time to throw away all those scabby VHS copies that have been lying around for 5 years as the Young One's have finally made it to DVD. You know the ones I mean, hidden away in a box somewhere destined to reappear one late evening when the alcohol runs freely. It amazes me that this

series grew into cult status almost immediately. It ran for 2 very short seasons, 12 eps in all, and has many amongst us spouting lines as if from Shakespeare. The eps get funnier every time you watch them, which is why DVD format is so appropriate for this show. **VM**

## Sweet Revenge

**Distributor:** Roadshow **Classification:** M15+



I am starting to feel a British overload this edition, completely unplanned, and this movie spiked the lowest point. There is nothing bad, nor wrong, about this film i just couldn't find that 'thing'. Often this is due to a lack of empathy for the characters or an irrelevant storyline

but for me in this case it was just too depressing British and not in a Ken Loach way either. After all Sweet Revenge is a comedy! It is not without moments but i can't think whom this film was made for. Perhaps i will put it aside for 10 years and see if its appeal grows with my age. **VM**

## The Goodies: 8 Delicious Episodes

**Distributor:** ABC **Classification:** PG



During the eighties most of us enjoyed The Goodies via re-runs on ABC, unaware some episodes were over 10 years old. 20 years on and the humour still draws laughter from anyone within earshot. How can you not laugh at a 10 story high fluffy white kitten storming the streets of London or

anyone that claims to be an ancient master of any martial arts, even Ecky-Thump, while looking like Bill Oddie. I don't know how they picked these 8 episodes but they seemed to know exactly the right set. I haven't laughed this hard since i last watched the same episodes in the eighties. **VM**



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OUT TO PLAY: Timothy C. Best



# As it Happens

**W**e live in a sea of information. We can watch a plane crash into the twin towers live, we can see a war on the other side of the globe unfold as it happens or we can watch an aging shock rocker try to figure out how to use a video remote after we invade his home and stick a camera in his face 24-7.

We live in a time of satellites and broadband Internet connections. Our world – our games – can be updated in an instant.

A games company named Kuma has connected the dots and is launching what it calls "Reality Games".

Kuma is going to start with War and then has plans to follow the success of "The Osbournes" with "Kuma: Celebrity", "Cops" with "Kuma: Crime" and finally fever with "Kuma: Sports".

In the first title, War Declared, players will get to play through realworld events a matter of weeks after they happen. It will use satellite photos, news coverage and whatever else is on offer, have it analysed by a panel of experts, and translate it into fresh game content. It'll even incorporate real footage into the levels – now that's class.

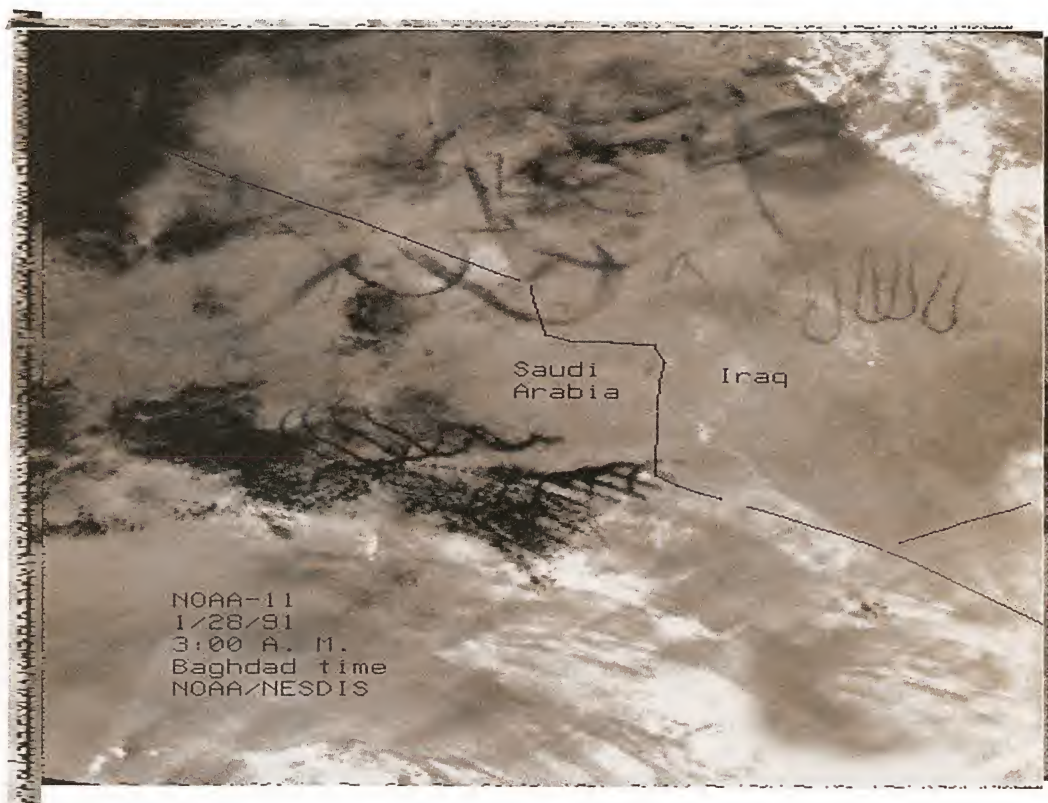
You could be right there, busting into the bunker and trying to take out Saddam's sons, Uday and Qusay.

Maybe you'd rather try rescue Private Jessica Lynch in a scenario that models everything from the types of grenades used to the exact location of the hostile snipers. Imagine the tension you could create. Just think of how much you could learn about the conflict and all the details that you could immerse yourself in. You can share some of what it must have been like of being a part of such a daring rescue, and you can tackle the challenge of coming up with a plan that's even better than the ones the professionals used.

Furthermore, if you like the experience of Kuma: War it never has to run out. Forget waiting 12 months for more content, you're constantly fed the most interesting situations from around the world.

You read about it, now play it ... this time it's for real!

The marketing spiel just rolls off the tongue for this one. Just put on an ad voice and let loose, it's kind of fun. Unfortunately, I have this sneaking suspicion that the marketing boys having slogan shoot-offs are going to have more fun than any of the poor play testers with their virtual guns.



Without so much as going near the moral issues, the very nature of Reality Gaming sets it at odds with good game design.

Just because an event makes headlines doesn't mean it will rock to play though. The chances that solid FPS level design coincides with say, the requirements for suburban living in an Iraqi city, are surprisingly low.

Also, oddly enough, real-life events rarely pace themselves in the most interesting, logical or dramatic way. The first fire fight could be make-or-break followed by a long, tense, walk in the park. Forget end of level bosses, forget working up to a climax ... that is unless Kuma build a bunch of artificial training missions or throw in random fights beforehand to make the action scale up properly.

Something that goes hand in hand with pacing is scaling the game's difficulty level. I don't know about you, but I like to be challenged without being frustrated utterly out of my gourd.

Not only is reality stubbornly indifferent when it comes to game balance, the U.S. Military actively opposes it. Cracking a walnut with a sledgehammer gives a much surer result, so the military is always going to try use overwhelming force.

This is great for keeping kids out of

body bags but doesn't make for very challenging gameplay. As I understand it, the U.S. forces got bored with the up-close and personal idea of raiding Uday and Qusay's bunker so they levelled it with big explosions from a safe distance. There's the reality of war for you. Maybe you'll get to point the laser target designator. Whoo-hoo.

Usually, things like character growth, a compelling story arc, and a sense of making a difference in the game world or the accomplishment of taking on bigger threats keep players going. In Kuma: War, all you have is the experience of reliving a real encounter, but this leads to a paradox: as soon as you let a player live the "real" encounter you start diverging from what actually happened.

The point of shows like The Osbournes is to see how people actually react to real circumstances. It's one thing to change events by observing them; it's another to let a player control Ozzie.

When it comes to war, different tactics could change such fundamental things as entry and exit points as they are barricaded, troop positions and even the number of troops – especially in a war where soldiers can blend back into the crowd. Furthermore, things like PR sanitation and this misinformation will make any war data suspect at any rate.

If players are looking for realism

then you'll probably find that the events in Battlefield 1942, Medal of Honor or Call of Duty will feel more real to you – exactly because they lean more heavily into fiction.

When you create events you can tailor them to resonate with events that touch all of us or that tell a bigger story. Reality, on the other hand, couldn't give two hoots about resonance; it does what it wants whether people are interested or not.

Now, I'm not saying that it's impossible to craft a great game from world events as they happen; I'm just saying that it's nearly impossible. You have to get the balance between realism and fun just right; you have to interpret events into a meaningful adventures; you have to playtest the game balance and you have to translate architecture into solid level design.

If you're at Kuma, you also have to do it all in a matter of six or so weeks to keep things fresh and to hit your gruelling update schedule.

Game design is an art with a lot of rules and, inconveniently, breaking news events never bother to learn any of them. Great games are made, not translated.

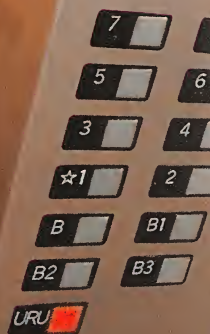
So, while "Because it was there," might be a great reason for conquering Everest, it makes a lousy motto for level design.



# Like exploring?

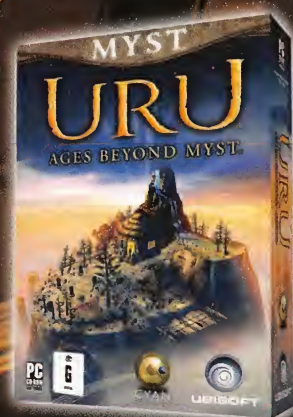


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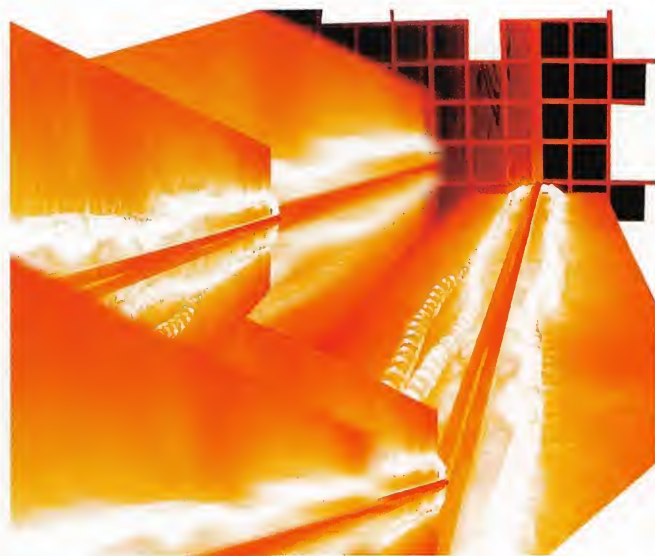


TECH TALK: Stuart Calvin

# Numpty's Unite

**I** speak this month of an overarching, multi-faceted problem, well three facets anyway. Gaming goodness is at stake and nothing less. Klez, Parite, Bugbear, Redlof, Fizzer are familiar names to readers who have been infected by these critters over the last year. The truly awful thing about malicious code like Parite, is that it infects executables like the NVIDIA Detonators or the ATI Catalyst driver suite, which does appalling things to gaming goodness. In short-time you can have thousands of infected files on your system. At worst there's no picture at all but mostly you're stuck at some dreadful resolution and can't change a thing. Framerates will suffer! Game standings will tumble! These are, however, but a pebble in the pond. The Fifth Horseman has arrived. If you patched your Windows computer against the Distributed Component Object Model (DCOM) Remote Procedure Call (RPC) vulnerability in July or early August a few months back, then you probably dodged the MSBlaster worm on Tuesday 11 August. A day later the perpetrator had wriggled into over a hundred thousand computers worldwide in just 24 hours. Even people on dialup were infected. Also known as Lovsan and Poza, it is an Internet worm, needing no invitation whatsoever, that's right, no email or file-sharing required! It exploits a known vulnerability in Windows NT/2000/XP/Server 2003. This security hole allows hackers to gain remote control of affected computers and it takes advantage of the DCOM RPC interface, which was patched in the MS03-026 security update on 17 July 2003. Even now, because many people have yet to patch their systems, the worm is still very active.

I'm angry. Any decent firewall, even the simplest, can block the port probes that worms like this use to seek new victims. The better desktop firewalls also alert you to suspicious outbound activity from your PC, so even if your PC were somehow infected, you could still see what was going on, and prevent your machine from infecting others. I knew what was going on. My hardware firewall logging went berserk, sending me emails every few minutes until I prolonged the time between notifications. I was totally safe because all unsolicited TCP and UDP packets are dropped by my system. This



is important for the MSBlaster issue alone. MSBlaster does not spread through the usual means, it scans the internet for computers that are vulnerable to its attack. Once found, it tries to enter the system through Port 135 to create a buffer overflow. Once installed in a machine, Blaster scans random IP ranges, with the aim of finding more PCs to infect. In addition, it creates a file in the system called msblast.exe, which contains the code of the worm. It creates a registry key to ensure it's started when the operating system is restarted. However, the aim of this malware is to infect as many computers as possible to carry out a Denial of Service Attacks against specific sites.

When a security researcher or a vendor first releases information about a software vulnerability, the clock starts ticking. Malicious users find out about unannounced or recently announced vulnerabilities through an online black market. How long will it be until a malicious user takes advantage of it? According to computer security company Qualys.com, "not very long". They say that for about 80% of publicly known vulnerabilities, exploitative code (such as this worm) appears within 60 days of an announcement. This is just a part of Gerhard Eschelbeck's Laws of Vulnerabilities which concludes that vulnerability prevalence is directly related to exploitation. The bad news is Prevalence: 50% of the most prevalent

and critical vulnerabilities are being replaced by new vulnerabilities on an annual basis. The Qualys Real-Time Top Ten Vulnerabilities, a dynamic list of the ten most critical and prevalent security vulnerabilities, lists some 'stuff' I've never heard of, nor ever will I suspect, except for perhaps the MS IIS 5.0 web server and SSL Server problems. Therefore, if you run your own website from home, like a buddy of mine, you have an issue. If you game off someone's private server, you too, will have an issue. You can view the RV10 issues at [www.qualys.com/RV10](http://www.qualys.com/RV10) and even get a free on-line scan to immediately identify the vulnerabilities on a network perimeter that are the most likely to be exploited at any given time. Those running home web/mail/file servers on a WAN need to get their shit in one sock and check out this site or ones like it.

"Patch, patch, patch!" I hear you all say. But there are problems - hidden and insidious. The MS03-026 security patch talks about a buffer overrun in the RPC interface in such a way as to induce a coma in even the most caffeine-stoked geek. But if you look for that bulletin number among the list of patches it's not apparent and you need to look for it on a totally different page. Strike One fellas. A problem with blindly installing Microsoft's Critical Updates, for example, is that until early Jun 2003 the MS03-013/Q811493

security update slowed a very large number of WinXP machines to a crawl. Strike Two morons! It took MS six weeks to fix it. Strike Three you idiots. The new patch went through a beta test cycle with thousands of testers outside Microsoft. Good move, take a walk. Did it restore confidence? Probably not, take a shower. The predicament was that some real-time AV scanners were concussed by the patch. The MS03-013/Q811493 security update for WinXP is a dual-mode hotfix package that contains updated kernel files for both the original version of WinXP and WinXP SP1. The regression error in the original Q811493 security update affects only the WinXP SP1 kernel files. These core-level, crucial operating system, kernel files comprising Ntoskrnl.exe, Ntkrnlmp.exe, Ntkrnlpa.exe, and Ntkrpamp.exe were replaced!! Was this Documented for Dummies?! I don't think so! Around the same time there was a new cumulative update for Internet Explorer 6, aka MS03-020/Q818529, that caused problems for some people. Further, in May 2003 Microsoft's patch for Internet Explorer, MS03-015, didn't patch at least 15 known, documented security holes - it's bizarre. But now, holes aside, at the time of writing, it appears as if all of the Windows critical updates through to MS03-031/Q815495 are stable and ready for prime time. But where the fuck is WinXP SP2?! It's Oct 2003 and if you install XP and visit Windows Update, there's nearly 110MB of files just waiting to steal bandwidth and valuable download allowance. On dialup? You just have to forget it, don't you? That is a problem of poorly designed distribution models. People fail to patch their systems primarily, in my view, not because they're stupid or lazy, but because it's too hard and fraught with obscure consequences.

To be fair to Microsoft, they have issued a security patch, on average, 300 days before a mass outbreak. Code Red was exploited, however, in as little as 31 days after the patch update, Bugbear on the other hand was patched 502 days before infecting more than TWO MILLION computers. Only half of all affected systems are patched within 30 days of a vulnerability's announcement, while the other half remain open to attack. Which half are you?



# GLADIATOR

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## THE GUERRILLA GAMER

# Guerrillas in the Myst



**N**ow I've thought up this clever title I have to justify it. And I can. Consider that until the Sims came along, the best selling game of all time was a thing called Myst. The younger readers out there might not remember it, but basically Myst was a series of attractive picture postcards stitched together with a few frames of borderless Quicktime movies and a New Age soundtrack. It sold more than ten million copies.

What does this tell us? It tells us we are only the tip of the iceberg of gaming, and good taste and sensible buying decisions went down a long time ago, taking the Leonardo DiCaprio of predictable market behaviour with them.

Just when you think you've figured out that gamers like twitchy, gory firstperson shooters (preferably set in World War 2) or freeform gangster carjacking sims, the spreadsheets throw up a number like ten million copies of Myst and you have to realise that most gamers aren't like us at all. Most gamers are boring.

To us, it seems the most natural thing in the world that we should want to play a game for the thrill of it, for the adrenalin-pounding immediacy of the twitch, the kill-or-be-killed instinct, the unbelievably prominent leather-clad cleavage. In other words, we play to switch off our higher brain functions and switch on the animal. We want the pow pow pow, now now now.

But for the majority of gamers, it would appear that they in fact want the animal suppressed. They want to

switch off the hurly-burly of the modern world and dip their psyches in the warm, enveloping embrace of a bloody blisteringly dull adventure game like Myst, where the slow-paced electric rocket ship ride to the other side of the island is too much high-octane action indeed and makes them save, exit to windows, and then go and make a shaky cup of tea as they consider the implications of the weird noises in the Mechanical Age.

If the case were that there was a strong but largely silent minority out there buying Myst I could probably deal with it, but it doesn't stop with Myst, and it's not a minority. Consider the hunting games. You know the ones, where you get to select from a wide variety of high powered telescopically sighted rifles, just like in Return to Castle Wolfenstein, but instead of unleashing them on electric Nazi zombie beasts from the hellish biolabs of Colonel Klink, you unleash these guns on cute furry animals, and in some cases, ugly-arse birds like the brush turkey. Sick stuff, I know, but this is what most gamers are buying.

Let me say that again - most gamers play Myst and hunting sims. You think it's wrong to call them gamers? I disagree - many of them log as many hours as we do, they have their own opinions about which calibre of hollow-point slug is best used to mash the forequarters of a twenty-point buck, they swap gaming stories, albeit using terms like "refresh rate" when they in fact mean "frame rate". But they are

gamers, like it or not.

Their odd habits hark back to the very early days of PC gaming. It's about evolution, you see. Just because something is old fashioned doesn't mean it's been out-evolved, necessarily. We are the gibbons, swinging free through the trees able to deal with complex gaming issues such as the save system in Outcast. They are the crocodiles, oozing through the primeval swamp, ancient but still deadly (The original metaphor involved cockroaches, but we changed it to avoid firebomb attacks on the Redfern office - Ed) with their slow and patient mouse clicks, their timeless note-taking and sketching of waterwheel puzzles.

It scares me, it does, to think that we are like a little beacon of light in a vast outwash plain covered in strange, slow-witted mastodons calmly chewing their way through hour after hour of static surrealistic landscapes and obscure steam-based doorway puzzles and pattern recognition tasks. Our bright and blazing games are so seldom played, but our passion is unmatched.

Occasionally, as happens in the US from time to time, there will be a slight crossover. One of our developers will bring out something that the mainstream takes a fancy to, such as Dirt Track Racing from Aussie gang Ratbag. It's like one of our games, except stripped down and made easier, more palatable to the simple tubular gut of the unevolved gamer. Point the car in a general direction and go, perfect entertainment after a long day

slinging hash, easily handled by the ageing Pentium 233MMX in the 'den'.

Finally, unlike us, the majority of gamers won't pay \$99 for a new release title. They'll pick through the bargain bins like bottom-dwelling catfish sifting through the muck in a stagnant pool, occasionally winnowing out a tasty morsel for \$15. Indeed, according to industry analysts Inform, a large chunk of the PC gaming market exists below the \$20 mark. \$19.95 is the price the PC gamer prefers to pay, and a five year old knock-off of Duke Nukem 3D is what they prefer to play. Either that or Myst.

The big exception to all of this is the Sims. Truly, it's the Rosetta Stone of gaming, the great meeting point where the proud few and the great unwashed meet in a common endeavour - keeping a digital person alive long enough to collect a stupidly large amount of consumables, pets, holidays and extra furniture. Sure, the unevolved gamer might actually try and give their Sim a good life in accordance with the design of the game while we do our damndest to make the little bastards suffer to within an inch of their lives and in extreme cases, wall them into rooms without water or toilets if they piss us off. But it's common ground and we should cling to it!

Will the unevolved ever die out? Unless we get hit by the gaming equivalent of the Yucatan Impact and many of them evolve into the kind of gamers we recognise, I doubt it. Most gamers will continue to be people who want slow, unaggressive games that cost \$10 and won't shock the mother-in-law should she drop around unexpectedly. Is this a bad thing? I guess not. I just feel weird, knowing I'm blasting my way through endless alien hordes while my next door neighbour is drawing a carefully simulated bead on a dewy-eyed doe, unmindful of the points penalty such a shot is about to cost him.

Worse, in the next six houses down the street, teenage girls are forcing pretend people to go to the toilet and fall in love with pretend strangers. Excuse me, I think it's time I went outside.

*The Guerrilla Gamer is a veteran PC games journalist who doesn't seem able to accept that some people like things a little different to him. He once beat up a kid in a fast food restaurant because this kid right, this kid was making some kind of speech about liking pickles on hamburgers. Can you believe this guy? I ask you. Now get out of my way, I'm about to finish Myst.*



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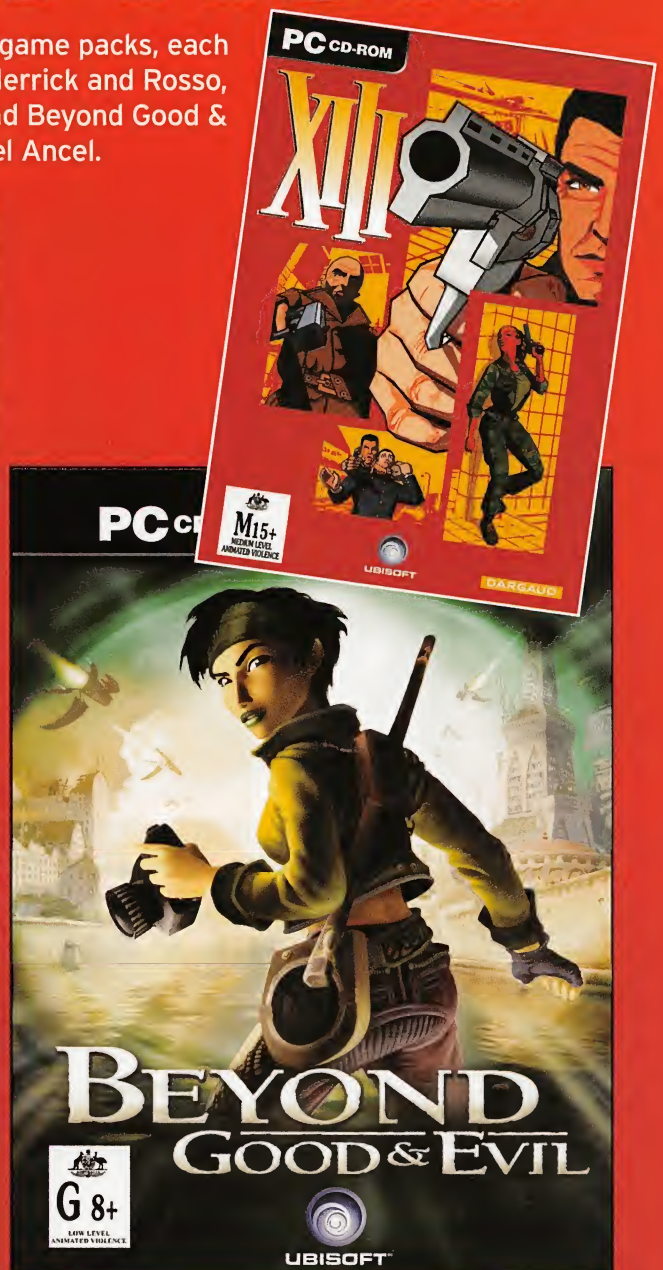
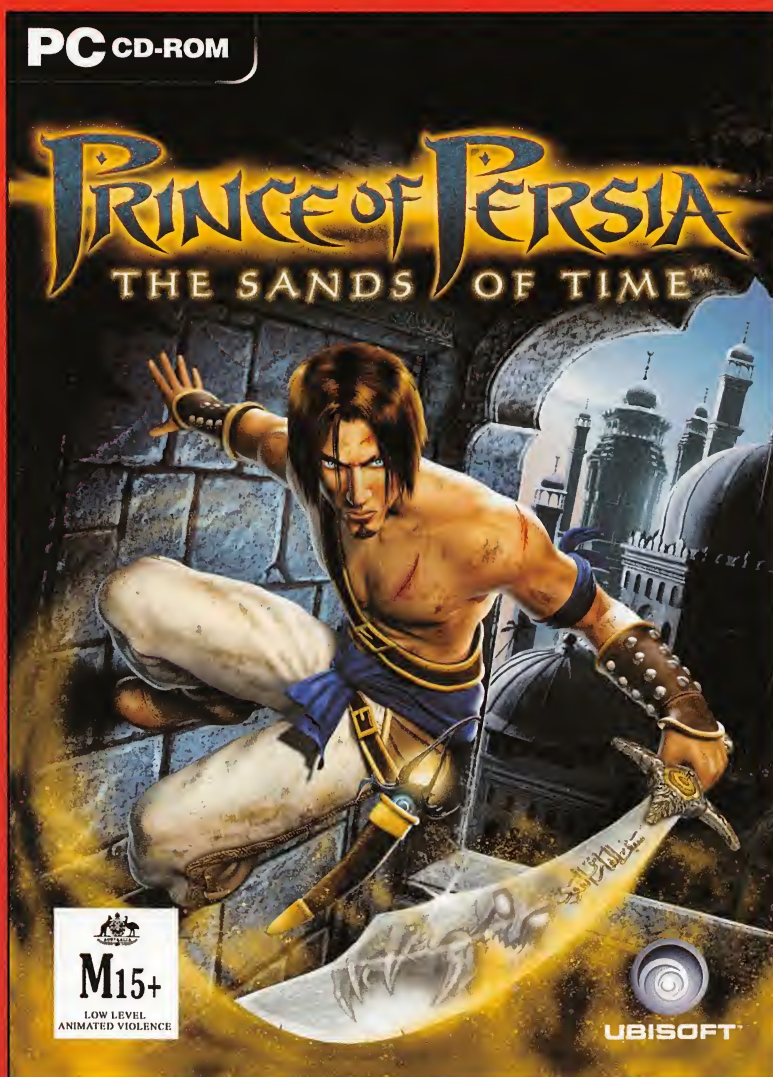
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# Breaking open Ion Storm

Deus Ex was a bold, ambitious new direction for gaming. Ion Storm promises that Invisible War will push the envelope even further. March Stepnik chats with Studio Head, Warren Spector, about following up one of the best games ever made...





It's a Monday morning at Ion Storm's Austin studio, but it doesn't feel like your typical Monday – nobody seems to be suffering from weekend hangover. Both of the studio's current projects – Deus Ex: Invisible War and the third game in the Thief series – are days away from major milestones and both teams are on lockdown, meaning the days of abstract discussion of game mechanics and narrative possibilities are long gone. Heads seem glued to monitor screens, conversation is almost non-existent and it appears as though people are actually working, hard.

And although the teams in many ways appear absolutely haggard (a positively grimey collection of staffers emerge for a breakfast of hot pizza in the studio's recreation room, answering the announcement over the PA directed to "those folks that have been here since the weekend"), there's a positive vibe in the air. As Warren Spector, Ion Storm's studio director puts it: "It's all really starting to come together. It's a time when people begin to see the fruits of the labour."

He should know – he's worked on a number of games, most of which read like a list of PC gaming's cult classics. He's collaborated on the Ultima series, Ultima Underworld 1 and II, System Shock and

Thief before releasing Ion Storm Austin's debut title Deus Ex in 2000. Since serving as project director on Deus Ex, Spector has settled into his role as studio director – a role which sees him overseeing the development of both Invisible War and Thief 3, as well Ion Storm's overall direction. We caught up with Warren to see how Invisible War was shaping up on the eve of its release.

### The drawing board

"For some reason, all the games I've been associated with have gone from 'playable' or 'okay' to 'really fun' and 'cool' in the final days and weeks of development," enthuses Spector. "Invisible War's no exception. The game is looking better every day. The artists have time to put in the little touches that make a game shine (instead of grinding through the creation of thousands of textures and objects and characters, which is what they've been doing for a while now). The designers and testers can actually play the maps and get a sense for the pacing and where players get lost and where we haven't supported various play styles and so on. Same for the coders, the writers, and the audio guys. This is the fun bit – where you're not building anymore, but polishing, tweaking, tuning..."



Spector has reason to be jubilant during these latter days of the game's cycle, because the development of Deus Ex: Invisible War has been – just like the development of Deus Ex – a long and oftentimes arduous process. However Spector readily takes responsibility for the steep challenges he's set for the company. "I've always said that I'd rather shoot for the stars and fail than rehash the tried and tested," explains Spector. "We want to be trying to solve problems that we don't know how to solve. If we're not, why bother? It may take us repeated attempts, but eventually, we'll get it."

And what is it that Ion Storm – under the direction of Spector – is trying to get? "I've told everybody: 'This is what we do, guys. We make games that immerse you in a simulated world.' Each game I've worked on – I hope – is a step forward in



making you feel more like it's you in the world, interacting with believable - and I want to underline believable here - people, places, things, events, and that you're really driving them. It's all about the creators of the game and the players of the game engaging in a dialogue, as you're playing the game. In Deus Ex's case, we were hoping to get players to ask the eternal question of 'What if? What if what I thought to be true, isn't?' On a more general level though, anything that we do at Ion Storm is going to continue to immerse you in progressively better-realised virtual worlds."

With a better understanding of what made the Deus Ex game experience work (the original Deus Ex as a cohesive whole only really 'clicked' during the last 9 months of development according to Spector), and the Ion Storm Manifesto at hand (see The Ion Storm Manifesto) the Invisible War team - headed up by Harvey Smith - focused their attention at the start of the project on giving the technology behind the game the attention it deserved. Spector admits that the graphics and physics components were relatively low on the list of priorities on Deus Ex.

"So we embarked on a fairly risky, fairly radical technology effort with Invisible War," explains Spector. "We started from scratch," continues Spector. "We looked at every system and asked if it was ideal for Deus Ex gameplay."

Almost everything but the bare shell of the Unreal Warfare engine was re-worked to allow for the ambitious design goals of the sequel. Ion Storm has built its own graphics renderer, allowing real-time dynamic volumetric lighting and shadowing. "You'll be able to actually change the way the world looks and works in more specific ways," says Spector, hinting that we might see more Thief-influenced gameplay options in Invisible War (success in Thief relied heavily on the players ability to not only exploit light and darkness, but to manipulate them too).

Ion Storm has also created its own sound propagation system from scratch, which is linked directly to the physics system. As a result, objects will make different sounds depending on which physics state they're in (whether they're sliding, or being dropped, for example) and what sorts of materials are being combined. "You may think 'who cares?'," quips Spector, "but when you're trying to make people believe they're in an alternative

universe, these subtle cues that you normally don't notice are very powerful."

Ion Storm also wrote all of their own AI and heavily modified the proprietary Havok physics engine to merge all the other systems together. All these new additions have meant that Invisible War has been in development for as long as Deus Ex was, even with the more focused design understanding and larger team size. "Trying to design a game while the tools and tech are changing underneath you all the time can be very difficult indeed. Also, the tech changes we wanted took longer than expected and had design and art ramifications we didn't foresee. And I'm not even getting into the process ramifications and team size/makeup

ramifications we probably should have anticipated but didn't. We've learned lessons about technology and risk management that'll be very useful in the future, that's for sure!"

## Choice

Ion Storm's risk-taking extends to Invisible War's overall game design. As proud as they are of what they achieved with Deus Ex in regards to player expression, the team are acutely aware of how fragile the illusion really was. "All the goals were completely linear," says Spector of Deus Ex. "We gave you a choice of how to solve the problems the game posed, but every player was essentially solving the same problem. So we really wanted to open up the idea of player choice in Invisible War."

For example, by the early stages of the first mission you'll be given at least three



Warren Spector



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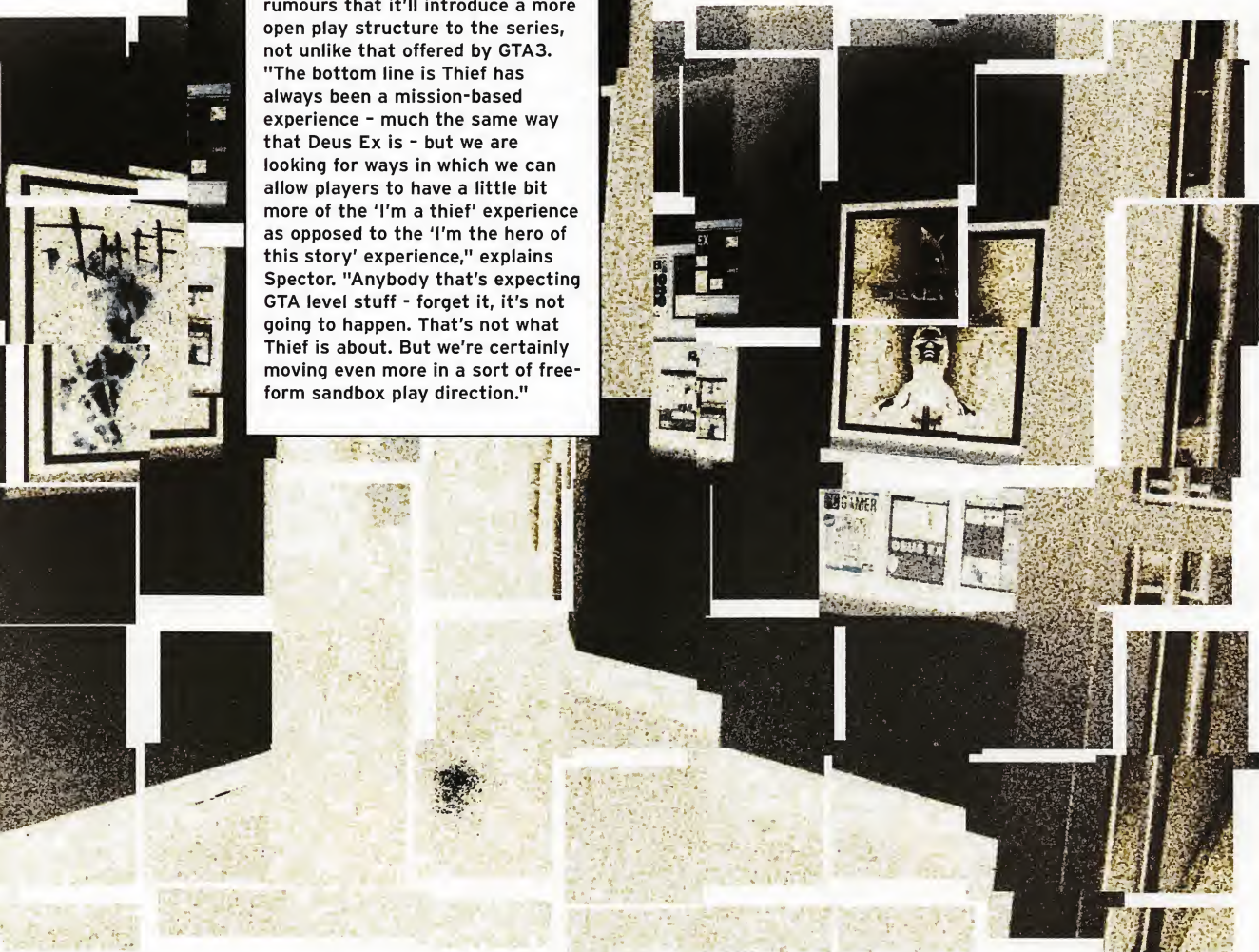
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# THIEF: THE EVASIVE PROJECT

Thief 3 was entirely out of bounds during our visit to Ion Storm, but we couldn't help but ask about the rumours that it'll introduce a more open play structure to the series, not unlike that offered by GTA3. "The bottom line is Thief has always been a mission-based experience - much the same way that Deus Ex is - but we are looking for ways in which we can allow players to have a little bit more of the 'I'm a thief' experience as opposed to the 'I'm the hero of this story' experience," explains Spector. "Anybody that's expecting GTA level stuff - forget it, it's not going to happen. That's not what Thief is about. But we're certainly moving even more in a sort of free-form sandbox play direction."



The halls of Ion Storm

primary goals that conflict with one another. Fulfil one objective, and you'll already have succeeded in stacking the two other parties offside. And should you change your mind as to who you'd like to side with as play progresses, you'll be able to do so repeatedly throughout Invisible War. After all, early decisions will be made under duress, with only minimal background information of the relevant parties.

Player choice will also be expanded to deal with more fundamental concerns. "We forced your hand in Deus Ex in that we said 'Okay.. psst! Bob Page is a bad guy'," reveals Spector. "We're not going to really do that in Invisible War. Players will have to decide who the good guys are and who the bad guys are for themselves- and the game will adjust accordingly."

This deeper level of player freedom has - from all reports - been a nightmare to implement. "You don't even want to know how hard this has been," groans Spector. "Giving players more control over what goals they wanted to go after - as well as how to accomplish those goals - is one of the bigger design risks we took on Invisible War. To give you an idea how

hard this has turned out to be, let me just say this: We're this close to signing the game off, calling it done, shipping it, and we still have a little strike team of programmers, designers and writers dedicated to solving this problem and nothing else. The ways in which players can break the logic of our gameflow by doing things in an unexpected order or in unexpected ways is pretty scary! Not only that, but we're still grinding away at giving players a reason to select one goal over another, communicating the ramifications of making one choice over another and then guiding them to the places that allow them to accomplish one goal rather than the other two or three or whatever they've chosen to reject. Quite the challenge!"

## Money matters

But there's a bigger problem that Ion Storm is rushing to meet head-on, and that's the rising cost of games development. "I'm not crazy about how big our teams are getting, how expensive our games are to create, and what that does to our ability to take risks," reveals Spector. "Accessibility is a big deal for us

The Deus Ex awards case



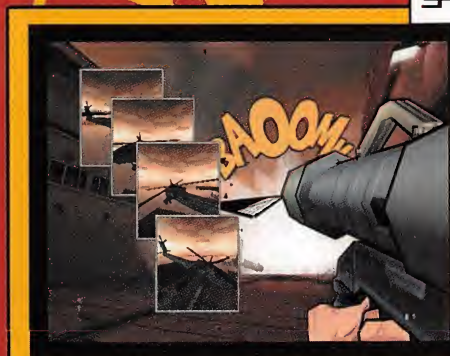


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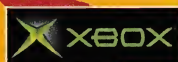


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## DEUS EX'S ENDINGS

One of the more intriguing questions Deus Ex players have been crying to have answered is just how Ion Storm plans to resolve the events of the Deus Ex endgame - after all, each of the three endings that players had to choose from were significantly different to one another.

"Yes, it was a real challenge," admits Spector. "We set Deus Ex up so it's all about player choice and how you want the world to look, so we couldn't ignore that. And Steve Powers - one of the designers on Deus Ex and Invisible War - simply suggested: 'Hey, why don't we just say all of them happened?' I was amazed at the simplicity of it, and I loved the sound of it. So the 'net got shut down, JC merged with Helios and you joined the Illuminati.

"And I want this to be a surprise, so all I'll say is that we've come up with ways that justify all of those happening as opposed to any one of them happening."

Our curiosity is only heightened.

interface? The streamlining of the interface proved to be most controversial in the PC-based Deus Ex community. The fact that a console version existed at all, let alone that it resulted in any form of redesign of the PC version, seemed proof enough for some that the Deus Ex experience was being dumbed-down for a mass audience. "But we're absolutely not dumbing down this game in any way," asserts Spector. "I think it's better - no matter which you look at it - to make a game simpler to play. The results will speak for themselves, but I'm much happier with how Invisible War is shaping up." The wait won't be too long: Invisible War is due to ship late next month.

Although Spector relinquished direct responsibility for the design of Invisible War ("Harvey Smith was ready to take the next step in his career, and fresh blood and fresh ideas were necessary. Harvey

with all current and future Ion Storm projects." Which is why X-Box versions of Invisible War and Thief 3 are being developed concurrently with their respective PC siblings - both versions will be identical save for control method (controller versus mouse/keyboard) and overall detail offered (PCs will naturally have the edge here).

Spector believes that in the area of game interface, the limitations of the console's controller influenced the PC version for the better. And although he agrees that Deus Ex's cumbersome interface turned enough people away from the game ("There's just not enough people out there who are willing to spend 10 hours learning how to play the game just to experience the other 30 to allow us to have ignored that problem"), he disagrees that Deus Ex gameplay is better suited to hardcore PC gamers more than anybody else.

"I've always thought Deus Ex style gameplay has the most mass-market approach you can take to gaming," says Spector. "A lot of people think it's this hardcore thing, that only nerds get it. But I actually think it's really inclusive. In most games I have one way to solve a problem. If I'm not good or clever enough to discover it, what do I do? What are my options? I can throw my controller across the room and stop playing. In Deus Ex, if you can't figure out one way to solve a problem, there's always another way, and another, and another."

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## THE ION STORM MANIFESTO

**The Ion Storm Manifesto**  
 "Our goal is to make great immersive simulation games in an environment of thoughtful analysis, respectful argument and quiet professionalism. We will make games that feature strong, traditional narratives expressed in decidedly non-traditional ways - ways that exploit the unique qualities of the medium. Our games will exemplify one critical concept: player experience is more important than developer creativity. Emergent gameplay, driven by player interaction with our game worlds and game systems (simulated or emulated), is more interesting than pre-scripted action. Problems with many solutions are preferable to puzzles that don't allow players to explore, experiment and express themselves through their choices. We will bound player experience but never determine it. In short, we want nothing less than to advance the state of the art in gaming, particularly, the immersive simulation arena. We want to do this while remaining profitable; we want to do this in close, honest partnership with our publisher; and we will do this without pandering to our audience in any way."  
 - Warren Spector, 1997

and the team have provided that in spades," says Spector), he's still 'in the trenches' getting involved with the day to day development of Invisible War. On his role as studio director: "I love that I get to stick my fingers in a bunch of pies instead of living, eating and sleeping a single pie (Okay, that wasn't expressed very well...). But seriously, I believe that the philosophy behind Ion's games is The Future Of Gaming and I feel like I can help spread the gospel more effectively running a studio that turns out several games rather than working to ship one at a time."

And what's the Future of Gaming, Ion Storm style? "The next big challenge has to be NPC interaction," Spector responds with enthusiasm. "I mean it's pathetic. The most fully-fleshed out characters in the finest game on the planet - how ever you define that - they suck! I mean, they're cardboard cut-outs, and I'm sick to death of that. We allow you to interact with characters in a variety of ways in our games, so we need better "Actors". We don't have them yet, and we don't know how to make our NPCs better actors. So that's the specific thing I want this studio to tackle next. Will we see it in the next round of games? I don't know - it's a pretty tough research problem. But, you know, I don't want to fall back on the industry standard now which is 'well, lets do multiplayer games and have real people driving this.' To heck with that. I want to do singleplayer games that make you believe that you're interacting with real people, in the context of an amazing story that we provide that we let you collaborate in the telling. That was almost English. Anyway... You know what I mean?"

We do - which is why Deus Ex was PC PowerPlay's Game of the Year in 2000. It's safe to say we have higher expectations for the sequel. Ion Storm are aiming for a late November slash early December release. While you wait, make sure you check out the spine-tingling opening cinematic of Invisible War on this month's DVD PowerPlay. Don't tell us you're not excited.

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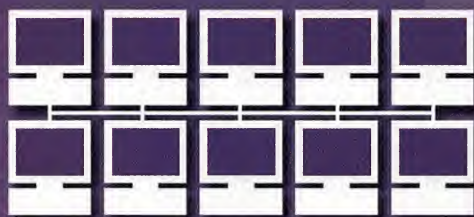
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# Ultima X

## Odyssey

The latest game in the Ultima series has been a long time coming. **Timothy C. Best** delves into the latest of the Ultima games, and finds an interesting blend of first person shooter style action and traditional roleplaying.

Origin has done the single player thing with Ultima one through nine plus UnderWorld, and it helped pioneer massively multiplayer online games with Ultima Online. Ultima X: Odyssey is something a little different that bridges these worlds with the familiar yet fresh-faced charm of the latest 'it-girl' starlet.

Don't call this a sequel; Ultima Online has reached its highest subscription levels and Origin doesn't want to lock swords with its own title, but as Senior Producer Rick Hall says, who wants to be a "one trick pony"?

In fact, having Ultima liberates UXO. Origin knows there are some things that UO does really well so it doesn't have to go there again. That left Origin with the exciting prospect of creating a whole new online experience.

Furthermore, it has been four years since Ultima IX with its bug-ridden but epic adventure and fans have been bugging Origin for the next instalment.

"Between the two motivations above, UXO just seemed like a natural idea," says Hall.

### Action and Adventure

One of the first things you'll notice about Ultima X is that it doesn't look or feel quite like your classic MMORPG and that's because it's got an engine of action pumping under the hood. Ultima X uses the mighty Unreal engine and it shows. You'll notice an almost shooter turn of speed as characters dash around, leap and battle furiously across the screen. Think something swashbuckling as opposed to your usual lumbering MMORPG affair.

"Like the daring champions of old, characters will be able to engage multiple enemies simultaneously, stand alone against some of the most powerful creatures in the game, and even defeat opponents that are more powerful than them by using superior strategy in combat," espouses Hall.

The combat of UXO wields the sword of real-time action while



carrying the banner of its RPG roots. Every time you click the mouse in combat your character takes a swing. The longer you wait the more time you take aiming and your chance to hit goes up.

This is made more interesting by the fact that each time you hit your character gains "momentum" and if you string enough hits together you can unleash a "combo" as your opponent reels under your attacks.

Likewise, every time you are hit your Defence score drops, but this doesn't have to be one-way traffic, by spending the same points that power your spells and special moves you can bump your defence back up and hopefully foil his attack routine.

"Spells and abilities have a wide variety of strategic effects, many of which have nothing at all to do with inflicting or avoiding

damage," adds Hall.

As you can imagine in this system style counts and players who manage their combat well can play bigger than they are. This ain't no target-and-leave game, that's for sure.

### The Legend Continues

Even with the FPS game engine and slashing combat, this game is, at its heart, a role playing game of adventure and legendary deeds that continues the story from Ultima IX.

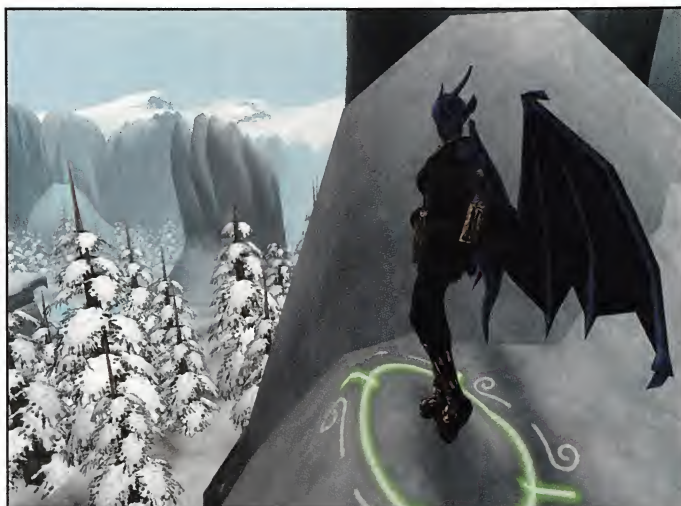
At the end of that game, your character has to ascend to god-like proportions to even confront the big bad Guardian; and even then, the only way to foil his plot was to sacrifice yourself, embrace the evil and become one with the foul being.

This leads to an interesting set up for the world of UXO.

"Alucinator is an amalgam of all of

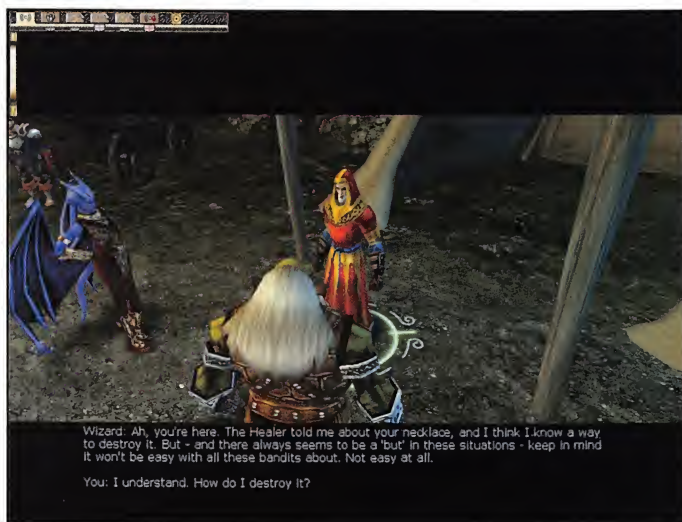
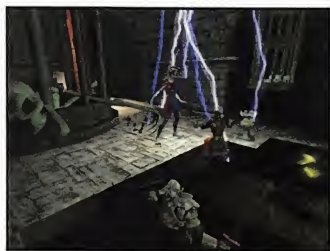
Developer: **Origin** Publisher: **EA** Distributor: **?** Due: **2004**





the places the Avatar has been in his life, and the situations he has faced in his journey to master the Virtues," explains Hall.

"His hope is that if Britannians can follow in his footsteps and learn the same lessons from similar experiences, then they too can ascend and help him battle the Guardian before it is too late."



The eight Virtues (Valour, Honour, Justice, Sacrifice, Humility, Compassion, Honesty, and Spirituality) are the heart and soul of not just the background, but the very gameplay of UXO.

## Heroic Virtue

Say there's a hideous creature that is eating people, the Virtue system defines the way the adventure unfolds based on how the player tackles it.

Players seeking Valour would challenge it to one-on-one combat, Sacrifice would involve offering yourself to save others, for Justice you would turn the creature over to the authorities, while the path of Compassion would probably involve talking to the creature and trying to cure its ancient curse.

So, not only will you have the usual variety of quests which multiplies when you swap out elements like the item you are questing for or having a new damsel to rescue, now you also have all of the different Virtue resolutions to explore as well.

From a gameplay and role-playing point of view, UXO provides something new: your



character and his or her beliefs actually matter to the world.

NPCs will actually start to recognise heroes and will even comment with awe about specific exploits, and instead of going to a guild or hanging out at bars to get quests, these NPCs will seek out players for aid.

When a character or party accepts a quest a new version of the dungeon is created just for them, so you never trip over other adventurers messing up your life and death struggles.

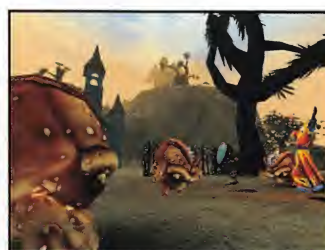
"This allows us to create highly tailored areas when needed, allowing our quests to be much more intricate and interesting," Hall says.

Parties elect a leader who gets to speak on behalf of the group

and hence chooses the path to follow, so you can expect to see the Knights of Compassion, The Furry Dice of Valour and so, on.

As you complete these themed missions you are awarded the appropriate Virtue points. In the short term, these let you buy special Virtue powers and allow you to imbue items with new abilities, but eventually, they allow players to master a Virtue and ascend to a demigod-like status.

After this happens, you create a new character who boasts special powers as a disciple of that Virtue. When this character finally maxes out a Virtue, the experience cap goes up on your original character allowing him or her to adventure further and master a second Virtue. This continues until the original



## MONO A MONO IN UXO

The player versus play system in UXO seems to be pretty neat too. First you need to issue a challenge and the other guy has to accept ... then you can start duking it out. You can also wager money and items on the outcome of the battle, and groups can set up multiplayer melees with higher stakes still. Players can even set rules of engagement to be agreed on. As you can imagine, this, plus the combat system, means that the guy with a level or two advantage might always go in favourite but won't always end up on top.





#### ACTION AND CRAFTS

To keep with the adventure orientation, crafting is something else that takes a new direction for UXO, in that certain items grow with their wielders, meaning they go up levels with characters. This makes crafting more a case of parting with a piece of yourself than slinging something together. Between this item growth and the ability to develop them by imbuing them with Virtue points we should see some very personal and unique talismans bringing their magic to Alucinator.



character embodies all of the Virtues and obtains Avatar status.

"The main goals here are twofold: first, we want to encourage players to try different character classes. Secondly, we wanted to provide a long-term goal for those players who really want to put a lot of time into a game in order to achieve something different and special," says Hall.

### Character Creation

Character creation is another area where UXO stays just far enough from familiar to be really interesting.

Players start by choosing to be a Human, Elf, Gargoyle, Orc, Pixie or the over-sized hamster-like Phoda. Since Origin didn't want race to shoe horn players into certain types of roles, Orcs make fine Bards and there's nothing, beyond self-respect, stopping you being a Pixie barbarian.

After that you have to choose one of four paths and choose an area of specialisation from the following: Blade (Knight, Barbarian, Fighter), Arcane (Mage, Sorcerer, Tinkerer), Nature (Druid, Ranger, Shepherd) or Balance (Necromancer, Bard, Paladin). As

## Don't call this a sequel; Ultima Online has reached its highest subscription levels and Origin doesn't want to lock swords with its own title

your character gains skill points they can purchase skills and abilities from any class within their path, but, obviously, it will be easiest to rise in your primary discipline. Paladins with Necromancy spells should be intriguing to say the least.

Once you have enough points in the lower tier of a skill tree, more advanced branches become available and when you have gained enough skill points you are granted a new level. That means players are continually rewarded as they adventure instead of having to wait out the grind, and it also means that character have more chance to pull out a new ability just as they need it in dashing story-book style.

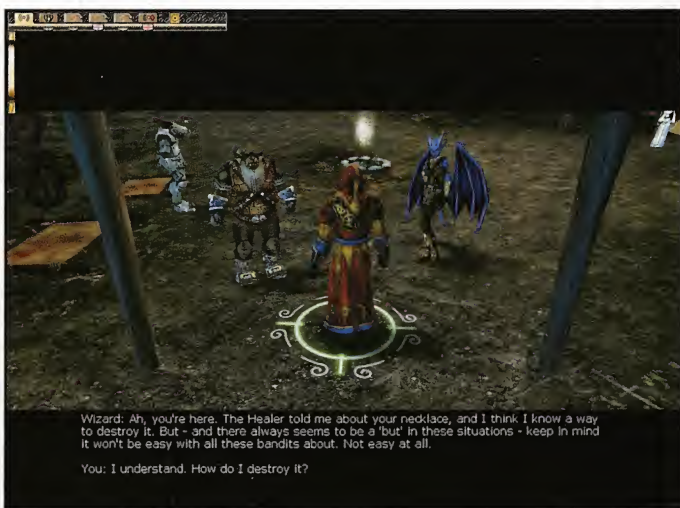
### New Odyssey

"We want each and every player to feel like their actions matter, as if every one of them is the main

character in a medieval fantasy novel," says Hall.

To help create this very specific experience, UXO has ten plus huge RPG titles to draw on for lore, spells, abilities, items and creatures; as well as the experience of pioneering the MMORPG field. They also have an elegant theme that ties everything beautifully together and the advantage of a state-of-art game engine which has let them spend the past 18 months focusing on gameplay and content.

UXO is looking like a fantastic gaming odyssey, made more solid by relying on clever design over dazzling technology. If the dev team can slay the bugs that infested Ultima IX, this looks like it might just put Origin back at the head of the class and make its old slogan "We Create Worlds," send shivers down backs like it used to.



Wizard: Ah, you're here. The Healer told me about your necklace, and I think I know a way to destroy it. But - and there always seems to be a 'but' in these situations - keep in mind it won't be easy with all these bandits about. Not easy at all.

You: I understand. How do I destroy it?







# Prince of Persia

## Like Sands Through the Hourglass...

You probably wouldn't associate Prince of Persia with The Matrix. Neither did **Daniel Wilks** until he saw it running.



Let me set the scene - our hero makes his way down a stone corridor, keeping a careful eye out for enemies and traps. Ahead, the floor of the corridor has collapsed, leaving a deep trench some twenty feet wide. Our hero takes a few steps back, takes a deep breath, turns and runs full speed at the gaping hole. At the last moment he turns, and instead of attempting to jump the gap, he plants his feet lightly upon the wall and runs with cat-like grace along the vertical surface, effortlessly clearing the divide. A little further along, the corridor curves off to the left. Sneaking closer our hero peaks his head around the corner, spying three enemy troops scouring the surrounding area for any sign of his presence. Determining that the best defence is a good offence, our hero arms himself, steels his nerves and with an unnatural burst of speed throws himself at his foes, springing lithely over the first to strike him in the back and vaulting off a wall to dispatch the second. The third villain takes a more wary approach, keeping our hero at bay with his staff and circling him slowly. The protagonist makes a few fluttering jabs to determine his enemy's defences. Discovering no weaknesses he takes the only option left to him and draws a small dagger from his belt. It's a beautiful thing, seemingly possessed of an incandescence not normally seen in tools of murder. The enemy, unfazed by the trinket, maintains his defensive posture, never letting the heroic youth within striking distance. Sword in one hand and dagger in the other, the young man steps forward quickly and taps the staff with the smaller blade. The effect, to say the least, is dramatic. With a cry the enemy is paralysed, the look of shock frozen to his ugly face dashed into a thousand pieces by a quick blow with the sword. Silence descends and you can



almost see the Prince of Persia smiling at a job well done, a fitting rebirth for one of the greatest 16-bit games ever. To celebrate the coming of the new action/adventure title, PCPP spoke with Yannis Mallat, Producer of the game about his thoughts on the license, teaching old dogs new tricks and what we can expect from the newest game to feature the exploits of the young Prince.

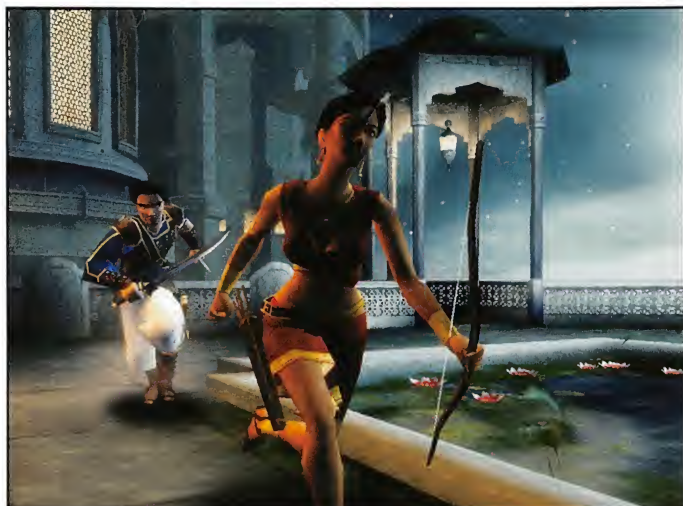
Although we have many fond memories of Prince of Persia, what most of us remember are the outstanding animations and little else. From the title you can assume that the action takes place in Persia, but for the life of us we couldn't remember too many more details. Instead we asked Yannis about the setting and plot for The Sands of

Time. He was more than happy to fill us in, saying, "The game will take place in an exotic and mysterious world representing Persian time, from architecture and style, to the animals and the attire. The player will take upon the role of the Prince. After his father, the King, invades the palace of an Indian Maharajah, the Prince, tricked by a treacherous vizier, uses a magic dagger that will release a deadly curse, the Sands of Time, from an ornate hourglass. From that point, the story will unfold into an unbelievable adventure involving the Sands of Time and the struggle for life against evil".

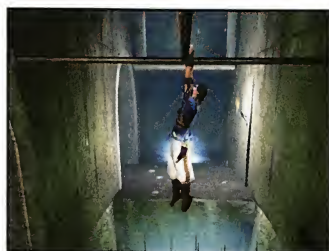
That's all well and good, but why resurrect the franchise in the first place? I'll be the first to stand up and hail Prince of Persia as one

Developer: **Ubi Soft Montreal** Publisher: **Ubi Soft** Distributor: **Ubi Soft** Due: **November**



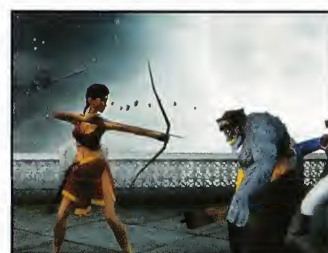


**As Yanniss said, the final effect is not simply a feeling of playing POP with new technology - it's a whole new, definitive Prince.**



of those games that made me want to shout its greatness to the rooftops, but considering the failure that was Prince of Persia 3D and the fact that we've not seen hide nor hair of the Prince in over four years, isn't it a bit late for a comeback? The Montreal based producer vehemently disagreed, stating, "I think the POP license deserved a real 'revival' and we all saw the potential when we started mocking up the Prince's moves and all the acrobatics stuff. I always felt the original game revolutionised the gaming industry. It became the standard of the time and an instant 'classic', and represented great Action-Adventure gaming, strong settings and compelling storytelling. Working on the fourth installment of this well-known franchise has been quite a challenge and a great honour for the whole team."

It's hard to disagree with anyone who will defend a decision that vehemently, and after playing some of the demo code we can't help but agree, as Sands of Time seems to breathe a whole new life into the franchise with new and innovative approaches to combat and movement whilst still retaining that tried and true Prince flavour. This time, Yanniss was in total agreement, and was only too willing to fill us in on Ubi Soft's design ideas, stating, "It is always challenging to revamp such a cult title as Prince of Persia does. In this case, it was important for us to remain loyal to the license while recreating certain aspects to please the markets. Therefore we needed to keep the quality of action through the intensity of fight sequences, the fluidity of movements, and the nature of



exploring acrobatic moves. At the same time, take the liberty with high level of game mechanics, rules and controls in order to revisit the Prince of Persia world as leader in the action/adventure category. We did not want to make the mistake of simply proposing the same gameplay, but with a superior technology, we wanted to solidify the 'Prince of Persia Experience'. The most immediately obvious example of this approach to this design approach is the fighting. Instead of simply having a sword, the Prince now has a dagger, as well. Although this may not seem like a huge addition it adds another layer of complexity to the fights and a range of other options, including special attacks. Instead of simply

moving left and right to avoid enemies as in previous POP titles, Sands of Time also features a series of dodges ranging from various rolls and leaps to running up enemies or walls so you can flip over or off them. As Yanniss said, the final effect is not simply a feeling of playing POP with new technology - it's a whole new, definitive Prince.

Anyone who has ever played Prince of Persia knows that it oozes with style and features some of the best animations ever seen in a game. Even though it was originally an 8-bit title, POP still managed to capture not only the atmosphere of the Arabian Nights but also the adrenalin charged dread of hanging from a precipice or fighting for your life against the Vizier's guards. To





## Sands of Time doesn't simply update the franchise to full, beautifully animated 3D, it adds a fourth dimension as well, allowing the player to manipulate time...

intricately melds martial arts with stylised dance. The story is that ancient Brazilian slaves were not allowed to fight against each other, so they simulated a group dance. People would clap their hands and pound on drums, surrounding the two people who were actually fighting; if they were approached, the fight could easily be disguised as a strange, fluid, acrobatic dance." After only a few minutes playing the demo, the influences could easily be seen in the effortlessly graceful combat, wall running, massive wire-fu style leaps and a wonderfully evocative soundtrack.

Of course, as is only natural, we save the best for last. Prince of Persia: Sands of Time doesn't simply update the franchise to full, beautifully animated 3D (ignore Prince of Persia 3D - pretty much every other fan of the series does), it adds a fourth dimension as well, allowing the player to manipulate time. Rather than a simple reiteration of the now all too common Bullet-Time, Prince of Persia allows the player to rewind, fast-forward and even pause time.

Yannis agreed with our statement, saying, "The greatest thing, besides the many animations of the Prince, is the fact that he can control time by using his dagger. Just to give you a quick overview of his powers upon Time: he will be able to rewind time in order to avoid perilous situations, which will happen quite often, he will also have the power to fast forward during combats and then have a serious advantage over his enemies, he will also be able to go into slow motion during a specific period of time, and finally, he will have the possibility to locally freeze an enemy and slice him in pieces."

From what we've played of the demo, the time powers feel wonderfully intuitive and perfectly suit the tone of the game rather than feeling like a kludged on special effect. The only problem we've really seem with the code, thus far, is that the mouse/keyboard controls do not feel as a gamepad, but considering the nature of the game it's a small gripe. Who knows, by the time the game comes out (hopefully around Christmas) the slight control problems may be ironed out. We're definitely going to have some fun finding out.



find out what makes the new Prince of Persia tick, we asked Yannis about the team's inspirations for creating the game. At first, his reply was fairly obvious, saying, "The Arabian Nights book - 1001 Tales - was required reading for the development team. It gave us a great, immersive sense of the Arabian fantasy feeling; it's imaginative and crosses boundaries - exactly what we're doing with the game." However, things quickly got more interesting when he went on to add, "As for the moves, the team was inspired by Hong-Kong action movies such as Crouching Tiger, Hidden Dragon and the Jet Li action films. We also watched several Capoeira documentaries - it's a Brazilian fighting style that









# Unreal Tournament 2004

Dog Fights? Full 360-degree movement? Humans versus Skaarj? Hold on a sec... this is Unreal Tournament, right? We haven't stepped into the wrong room, have we? **March Stepnik** reports.

The installation is ahead of us, and the Skaarj are closing in. A small number of them circle us like sharks, but our more agile fighter ships prevent them from being too much of a threat. No, the Skaarj fighters are a mere distraction; our focus is the last of the handful of shield generators preventing us from boarding their mothership. The real danger, however, is the battery of laser and missile fire hailing from the mothership itself. We duck, we weave, we jerk about with the freedom granted by the 360 degrees of movement, when a missile finds its mark. The remaining shield generator explodes in a shower of sparks and flames. Waa-hoo! Our fighter makes a broad bee-line for the nearest docking platform.

Cliff Bleszinski - UT2004's Lead Designer, and the man currently at the controls during a demonstration at Atari's Editor's day in Mexico recently - jinks the human fighter to avoid a last ditch attempt by the Skaarj to thwart him then glides into the heart of the massive structure. "Are you dizzy yet?" he asks, with a hint of a manic gleam in his eye.

## Nope, not yet

This is Unreal Tournament 2003, 2004 style, and it's looking a markedly different beast to its predecessor of twelve months ago. Oh, we're not talking the system-busting and absolutely gorgeous graphics engine here (although it too has been the subject of a number of minor tweaks); what we're talking about is content, and, more importantly, how the game is



played. Because it seems this sequel exists primarily to answer the gauntlet thrown down by other developers of multiplayer firstperson shooters out there.

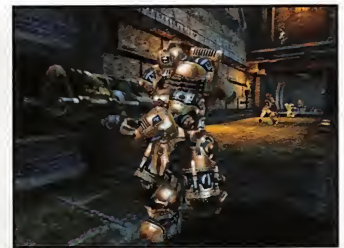
"Well, it must be said - and you'd be surprised at how many people this upsets - deathmatch is so five years ago," asserts Bleszinski. "Everybody's moved on to Battlefield, and Planetside and Halo, and all that cool stuff. But you have to look at where the genre is evolving towards, and it's evolving to complex team-based modes, vehicles and amazing amount of freedom and emergent gameplay. These are the areas we're keen to move towards too. Gamers expect these kinds of experiences now."

That's not to say that Epic has abandoned the immediacy of pure deathmatch. Indeed, all of the modes present in UT2003 - including

deathmatch - return for UT2004. But it's the game's two new play modes - Assault and Onslaught - that represent not only Epic's commitment to exploring new possibilities in FPSs, but exemplify their dedication to the refining of existing play styles.

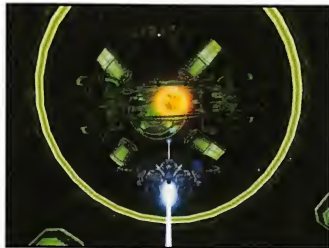
## Enter Assault

Those who played the original Unreal Tournament will be probably be no stranger to Assault, a game mode where one team co-ordinates an attack on an installation, while the other team defends it. The team which either successfully reaches the objective or prevents the other from reaching it within the time limit wins the round, after which the same map is restarted - this time with the roles reversed. Indeed, it proved to be one of UT's more popular game modes and its



Developer: **Origin** Publisher: **EA** Distributor: **?** Due: **2004**





exclusion from UT2003 provoked glowing disapproval from its more active and vocal fanbase.

Epic's making amends with the 2004 version of Assault - an update that's improved on the original in almost every way. The maps are much larger and there are now multiple checkpoints along the way. But more significantly, the environments are more interactive too, opening up new

strategies for players.

To take our opening example of the Skaarj mothership Assault level a little further ("If you've played the original Unreal, this'll look familiar to you," says Bleszinski), the map's only partly completed once you overcome Skaarj defences and dock. Once inside, you've got to proceed to two energy bypass mechanisms (disable them) and three defensive gun turrets (destroy them) before making the final assault on the ship's core. However, there are options. You can take the long way around, or you can disable the gravity generator and take the shortcut - allowing you to leap the map's numerous chasms between you and the power core with ease. Restarting the generator could also prove fruitful. Bleszinski explains, "When you turn Gravity back on, players under the floating objects in the world will get hurt pretty bad when they all come crashing down back down again." Timing, of course, can be everything.

UT2004 will include a total of Six Assault maps and they'll each take a theme from the Unreal universe (the other Assault map we saw, was, as Cliff calls it, the spiritual successor to UT's train



level). Although these maps are designed for multiplayer, Epic is focusing on delivering a very tight singleplayer experience for all of the game modes as well. "We looked at the numbers and only 20 percent of the people who ever bought UT2003 actually played it online. It actually shows that bots go a long way," says Blez. And Epic is further tweaking its already strong non-player character AI to include some of the

behaviours developed by players after UT2003 shipped. Expect bots you'll be able to learn tactics from.

## Onslaught

And then there's Onslaught, the all-new game mode. We're shown an unpopulated Onslaught map, so Mark Rein, Epic's Studio Director explains the premise.

"Onslaught is a large scale, team and vehicle based game mode in







which players battle for control of huge exterior settings. The main objective in any Onslaught game is to destroy your enemies' 'Power Core.' This critical point is usually located in the heart of your opponent's base. Sounds simple, right? Here's the catch - a Power Core cannot be damaged unless your team has a link to it.

"And how do you acquire a link? By controlling the smaller 'Power Nodes' on the map and making a connection from your own Power Core to your opponents. Power Nodes begin

as neutral points in the level and once they're touched they begin to build for your team. At this point the opposing team can attack and try to destroy the Node as it is being constructed. If they manage to destroy it, it will go neutral again and can be re-claimed by either team. If they fail to destroy it the Node will be built for your own team and a link will be made to your own Power Core."

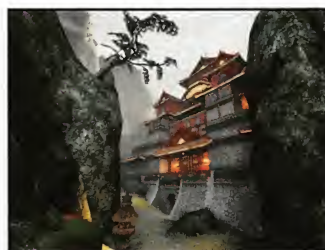
The important thing to note here is that players can only capture a Power Node that's adjacent to one already controlled by their team, so

coordination between players will be vital. The similarities between this aspect of Onslaught and Planetside is old news to Epic. "Comments have been made about the link system - that it reminds people of Planetside - but you don't have to pay 20 bucks a month to play this," says Bleszinski. "More importantly, Onslaught still has that fast Unreal pacing - that's something we wanted to maintain."

Which brings us to Unreal Tournament 2004's other big addition: vehicles. There are nine in all, covering both ground and air (and space!) assault vehicles, ranging from single-pilot scouts to heavily armoured, weapon-mounted, three-person jeeps. Epic hasn't skimped on the physics either, and the brief period we got with the jeep was surprisingly reassuring - they've not been tacked on to keep up with the Joneses. Apart from being vital in stages like Assault's Skaarj Mothership map (with space fighters) or almost all of the nine Onslaught maps (travelling those large maps without one could be a bitch), these vehicles are, most importantly, a heck of a lot of fun.

#### MORE THAN A SEQUEL

Unreal Tournament 2004 seems to be more than just UT 2003 with Onslaught, Assault and vehicles - a supporting cast of features comes also comes to the fray. As well as all of the original game maps there's a further 20 new ones - and these don't include the 15 Assault and Onslaught maps. A couple of new weapons will feature, with only the Sniper rifle revealed so far (not to mention the ability to wield dual assault rifles). The Sniper rifle is currently one of the most powerful weapons in the game, so to balance its bite players will have to counter a cloud of smoke that obscures your view each time you use it. Voice over IP will be supported, as well as better support for UnrealTV match broadcasting and the user-end voting system for game types before and during a match. Epic want to make the transition as smooth as possible: UT2004 will be backwards compatible with UT2003. All existing mods will work with UT2004, and UT2004 users will be able to connect to UT2003 servers and games.



**Epic hasn't skimped on the physics either, and the brief period we got with the jeep was surprisingly reassuring...**





# UNDER THE HOOD

**W**elcome to Under the Hood, where we look at the technology that drives the blockbuster games we play, as well as the games we're getting excited about. In other words, we're digging up the dirt on the major game engines with detailed explanations of the game engine feature sets, direct from the people involved in the creation of these engines.

This month we spoke with Petri Jarvilehto, Lead Game Designer on The Fall of Max Payne, about the technology underpinning Max Payne 2...

## MAX PAYNE 2

Max is back, and this time he doesn't look constipated. We had a chat to the guys behind the game, to talk about the new engine that powers the onscreen action. While the original had some rather purdy visuals, there's no denying that the sequel raises the eye candy a notch... here's how they did it.





**Can you please give us a little background on the development of the Max Payne 2 engine? How does it compare to the original Max Payne engine?**

The new game engine uses the original Max Payne engine as the basic code base, but we've enhanced it on almost every front. For example, the AI code has been completely re-written from Max Payne, we've integrated the Havok 2.0 physics engine into the game, and we've really boosted the visual level of detail. The lighting is much more accurate and the particle systems are much richer.

One integral element in the engine is our ability to slow down time at will. All of the particle systems, sound effects and whatnot can be scaled freely when the gamer hits the Bullet Time button. For Max Payne 2, we also separated the player and the enemies into different time tracks. Once you start kicking ass and taking enemies out in Bullet Time, Max will go "deeper" into the zone and time will start slowing down around him, while he's still able to move faster. To truly understand how well that works (with particle effects blossoming around Max while he's still able to keep quickly firing) you really need to play the game.

**The Max Payne 2 engine makes use of some cutting edge graphics techniques to bring stunning character detail and gorgeous environments, not to mention realistic lighting effects. What are these features and how do they work?**

First of all, I think the main thing is that we just work very, very hard on the artwork. Even the best of the engines can look really bad if the artwork is not of extremely high quality. Having said that, a good engine will give you a lot of options that provide richer and more satisfying visuals. Things like mirrors, high definition lighting, texture-compressed crisp textures, and high polycount skins will provide the player with a more immersive and cinematic experience. But I don't think graphics alone create the beauty of the game, the dynamic aspect of physics and ragdolls can also be stunningly beautiful when Bullet Time kicks in.

**Sound is obviously very important for creating atmosphere and mood - can you tell us a little about the Max Payne 2 engine's sound support?**

You are absolutely right, sound is critical. We've aspired to reach a movie quality sound-scape with

the game. The sound engine is all custom code. We added a lot of things there, boosting up the number of channels (up from a maximum of twelve to sixteen from the original Max Payne), adding support for multi-channel audio (5.1 and 6.1 setups) and we're now also fully supporting EAX, so different spaces finally sound different as well. The space around the player becomes more alive, dynamic and adds to the feeling of actually being there.

**Can you discuss the Max Payne 2 engine AI? Any new tricks that separate it from other game engines?**

As I said, we completely rewrote the AI. To be honest we weren't really that happy with the AI in Max Payne, which required loads of custom scripting, so our target with Max Payne 2 was much more stand-alone and self-aware AI (while at the same time still preserving the ability for the

mapper to jump in at any given time and provide scripted goals for the AI). Anyway, we started out by splitting the AI perception into hearing, seeing and touching things and that in itself makes a big difference. While playing the game the enemies are no longer magically aware of the player's position, rather, when they hear shots they first move to a position where they have a line of sight to the location where they think the player is, then start advancing.

The fun side effect is that you can also now play games with the AI, fire off a few rounds in an alley, and retreat for cover, then wait a while to see if anyone comes to investigate and so on.

**Will gamers need, or benefit from, any specific hardware when running Max Payne 2? For example, a DX9 video card, or Hyper-Threaded Pentium 4?**

Although Max Payne 2 will run rather nicely on a moderate system if it needs to, the physics obviously need CPU resources, and some of the post-processing effects we've done want the graphics power. You can enable full details on a DirectX 8.1 card, but Max Payne 2 really shines when you give it a DX9 graphics card and a fast CPU. If you turn on full detail, it's really quite an intense experience of sight and sound.

**What is the baseline system necessary to run Max Payne 2 with most of the eye candy turned on, at a resolution of 1024 x 768, that will allow gamers to have smooth frame rates even during the most detailed/resource intensive scenes?**

We'd recommend at least a 1500 MHz processor (as you know, a bit lower will do if you're on Athlon and a perhaps bit higher if you're running Intel) with a DX8 compliant 64MB graphics card to enable "most details".

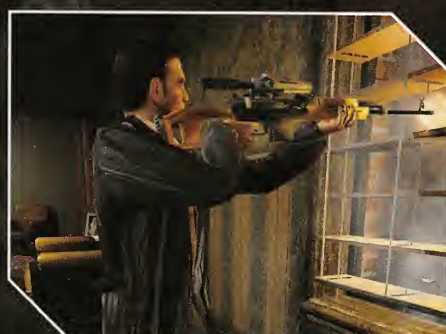
**Explain what the Max Payne 2 physics engine can and cannot do.**

We're running a lot of things under the physical simulation, so objects, dying characters, weapons and so on all behave physically correct. All of the objects are material dependent, so heavy metal objects have different weight than cardboard objects (weight is calculated according to the

**The new game engine uses the original Max Payne engine as the basic code base, but we've enhanced it on almost every front**











density of the material)... sounds are also material dependent so a hollow metal barrel sounds very different from a plastic trashbin when it's tumbling down the stairs (and then you still have the environmental audio on top of that, so the metal barrel in a large room will sound different than the same barrel in a small confined space).

When we got the whole system running for the first time we had a lot of fun playing around with the materials, creating bouncy rubber balls and other fun toys to play with in the game environments.

When an enemy is shot, ragdoll physics allow the velocity of the bullet(s) that have been hitting him to be passed onward to the character, and further impacts will still register on him. For example, a character running across the screen will have his head snap back violently if you manage to shoot him in the head, and while he's flying backward any further impacts will still register on the dead body.

Havok 2.0 provides us with physical simulation of pretty much everything we need. Objects collide properly against each other, ragdolls collide properly against physical objects, and so on.

**Describe the modding and creation tools that the Max Payne 2 engine will ship with.**

We'll be making MaxED available as a separate download sometime (shortly) after shipping. MaxED has been completely rewritten and now has a pretty neat "Prefab" system, where you can create instances of objects where any edits of any given instance can be updated to all other instances automatically.

Radiosity lighting is now about 20 times faster to calculate. Radiosity lighting can also brighten up the environments - the radiosity in the original Max Payne only made things darker.

The Dead Man Walking mode of gameplay is quite an intense action fest. With our new AI this should allow quality modding to show up very rapidly... but I won't get into that here now!

**How has your experience with the 3DMark technology informed the way in which you approach building a new game engine?**

We're working right next door to Futuremark and keep in close touch with them, and that's been really helpful. They have a keen knowledge on where the 3D acceleration will be heading in the future and brainstorming things with them has made some decisions a lot easier. Also their statistical data on end-user hardware has been

really useful for things like quality assurance.

**What do you believe are the advantages your technology has over potential competitors such as Half-Life 2, Doom 3, Far Cry or STALKER?**

I haven't really thought of any of those games as head-to-head competition. We are taking a single player experience further with an ambitious story and cinematic combat to a new level with Bullet Time and physics. Each game seems to be quite unique in their approach and I think there's plenty of room for high-profile titles to make it in today's market as long as the games themselves don't overlap... and I don't see any of those games attempting to tell a love story with a strong lead character.

**Anything else you'd like to mention about your new game engine?**

Seeing is believing. The technical list of features and enhancements is long and impressive - but all of this comes down to a few key things. The gameplay looks and feels better. The players are more immersed in the world and we can evoke a larger scale of emotion. All the technology is in there to drive these key points.



**...a character running across the screen will have his head snap back violently if you manage to shoot him in the head...**





# Athlon 64 FX 51



**W**e're sick to death of new hardware releases that promise to deliver a brand new gaming/entertainment/lifestyle experience, yet end up giving us 2.3 more frames per second over the old piece of hardware it replaced. Lately it seems that new hardware has simply delivered incremental performance increases, rather than the kick ass boost we saw with products like the RADEON 9700 PRO, making the urge to upgrade about as powerful as the urge to get off the bathroom floor after drinking a carton of Crown Lager. Breaking this drought of mediocre hardware releases is the Athlon 64, promising to not only kick some serious Pentium 4 punani, but also to drag desktop computing into the 64-bit era. Yes, big promises indeed. Thankfully, it looks like AMD have delivered the goods... and delivered them big time.

The biggest feature of the Athlon 64 that we've all had pummelled into our heads is its move to a 64-bit architecture. Thanks to an instruction set called x86-64, the Athlon 64 is actually both 32-bit and 64-bit compatible, in contrast to Intel's 64-bit Itanium (well, the Itanium can run 32-bit code, but suffers from a major performance hit when doing so). This means you'll be able to run 64-bit software, and when doing so, processes will be able to address more than the 2GB of memory we're currently limited to with 32-bit hardware and operating systems. The problem is, there isn't any 64-bit software available (well, when it comes to consumer level software at least). Heck, there isn't even a 64-bit version of Windows yet; expect it to hit PCs sometime next year. Linux freaks can ignore that last comment, as there are indeed 64-bit versions of the Linux operating sentence. Apologies to those two readers.

When we do finally get 64-bit applications, we can expect a large performance boost for complex calculations - specifically those that deal with high levels of accuracy, which will benefit from the use of 64-bit floating point numbers. But we're sure you don't give a damn about being able to run more complicated databases or spreadsheets - how will our games be affected?

According to AMD, 64-bit games will be closer to photorealism than our current crop of AAA graphics engines, and for good reason. Thanks to the higher level of precision offered by 64-bit computing, a much higher level of graphical detail should be possible. We should also have more realistic physics engines and AI as a result of the move to 64-bits. However, if you buy an Athlon 64 with 64-bit games in mind, there's a slight problem. Actually, it's more of a devastating, 'don't even think about it', problem. Remember how long it took for the transition from 16-bit to 32-bit computing? Well, expect it all over again with 64-bit computing, but it'll probably take even longer due to the larger number of 32-bit applications now in use than 16-bit ever had. Thanks to this slow migration process, it might take anywhere between two and ten years before we're playing a majority of 64-bit games. And by then, today's Athlon 64s will look positively ancient. So far, we've only heard of one game that *might* be released in a 64-bit version in the near future, Unreal Tournament 2004, and even this isn't set in stone. So the Athlon 64 had better perform pretty bloody quickly in existing 32-bit applications if it's got any chance against the speedy Intel Pentium 4.

There are several other new features of the Athlon 64, which is based on the K8 architecture, that differentiate it from prior Athlons. In fact, many of these changes are truly revolutionary, making the Athlon 64 a technological trendsetter, and even extend to the chipset necessary to run the CPU.

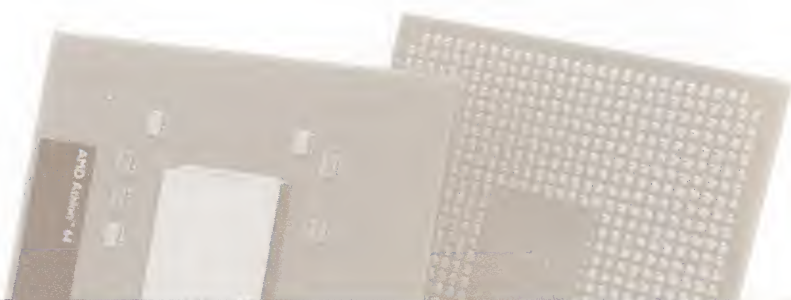
## Elephantitis of the memory

For starters, it's got a massive 1152KB of cache, which is the super speedy, super expensive memory built into the CPU. More cache leads to faster performance, which is one of the reasons the Northwood Pentium 4 did so well. It's not the first CPU with a full megabyte of cache, but it is the first mainstream desktop processor to do so; Intel will catch up in the cache race around Christmas time with its Prescott CPU, which has the same amount.

The Athlon 64 has almost twice as many transistors as the original 1999 Athlon, rising from 54.3 million up to



**Yes, it's a 64-bit CPU, but who cares when there aren't any 64-bit games, let alone a 64-bit operating system, to run on it? Bennett Ring checks out AMD's Athlon 64 FX-51, to see if it's got the necessary grunt for the 32-bit games of today.**



105.9 million - and as you can see from our die shots, a large proportion of this CPU real estate is devoted to solely to the cache. The CPU is manufactured on a 0.13 micron process, and uses a new technique known as SOI (Silicon On Insulator). This tricky technology allows the CPU to run at a lower voltage, and can also help the CPU's transistors to switch faster. The combination of SOI and the 0.13 micron manufacturing process make this a very cool CPU. Our 2.2GHz review sample ran under load at around 39C, so you needn't worry that you'll need to strap a Huey to the CPU to cool it down. And if you've ever chipped a corner off the fragile Athlon XP core, you're bound to appreciate the protective heat spreader found on the Athlon 64, making this CPU as sturdy as our beloved Pentium 4. AMD even redesigned the heatsink socket design, resulting in a very easy to use socket. They really did think of everything, didn't they?

### **We missed the bus**

Kiss your beloved frontside bus goodbye. Instead, it's been replaced by AMD's HyperTransport(tm) technology (formerly known as Lightning Data Transport), which can also be found in Apple's 64-bit offering, the G5. Running at 800MHz, this is double pumped to deliver a maximum theoretical speed of 1600MHz, which is double the speed of Intel's 800MHz (200MHz quad pumped) frontside bus. Like your frontside bus, this handles all of the data between the CPU and the South Bridge, but isn't bogged down by data going between your RAM and the CPU, as the FX-51 has its own dedicated memory bus.

### **One bridge less**

Gone is the North Bridge motherboard chip as well. The North Bridge found on today's motherboards is mainly tasked with controlling your memory, and feeding that to your CPU, but the Athlon 64 design has the memory controller built into the CPU. There's a slight problem with this though - to move up to faster memory speeds, you're probably going to need an entirely new CPU with a new memory controller. However, by building the memory controller into the CPU, the latency between the CPU and system

memory is reduced, increasing performance, and our memory sensitive benchmark UT2K3 suggests that this can have a significant impact on game performance. Throw in some SSE and SSE2 instruction support, and the Athlon 64 is quite a package.

There will be two different Athlon 64s at launch; a high end model and the standard model. The standard will be labelled very similarly to the current Athlons, with the launch model being the Athlon 64 3200+, running at 2GHz. As you can see, AMD are sticking with its performance rating numbers rather than the frequency of the CPU. The high end model is aimed at the gaming market, and is labelled as the FX, but uses an even stranger numbering system. The review sample we used was the Athlon 64 FX-51, and it's the 51 in the name that is supposed to denote the level of performance. We have absolutely no idea how this rating scheme for the FX series is going to work, and we're pretty sure consumers won't either. We love your new CPU AMD, but the naming scheme sucks pretty hard.

The difference between the two Athlon 64s is the memory controller - on the standard model a 64-bit memory controller is used, while the FX uses a 128-bit controller. This gives the FX double the memory bandwidth of the standard model, for a total of 6.4GB/s compared to the standard's 3.2GB/s. It also means you have to use more expensive registered DDR RAM - anything between PC1600 (DDR200) and PC3200 (DDR400) will do the job, although the best results will obviously be with PC3200 (DDR400).

Because of the different memory controller in use, the two CPUs have different socket designs. The standard Athlon 64 uses a new Socket 754 design, while the Athlon 64 FX-51 uses a Socket 940 design that is identical to that used by the Opteron CPU. So regardless of which of these chips you choose to use, you're going to need to upgrade to a new motherboard to make use of it, unless you're already running an Opteron. In fact, the Athlon 64 FX-51 is to the Opteron what the Athlon MP is to the Athlon XP - they're both basically identical with one

small difference. The Opteron has three HyperTransport links available, while the FX-51 only has one, due to the fact that the Opteron is designed for use in multiprocessor servers.

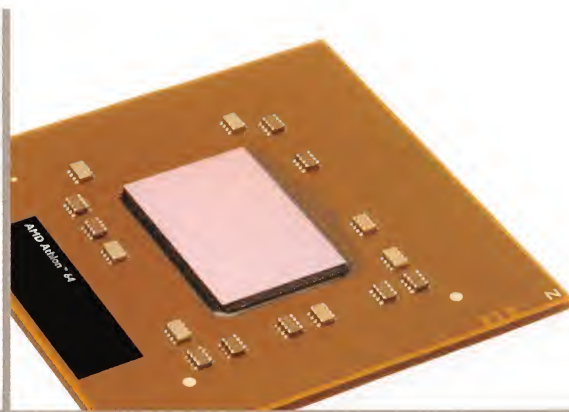
### **Bench me baby**

All of these changes make the Athlon 64 one of the most innovative CPU architectures we've seen for a long time, but this means diddly squat if it doesn't perform well in today's 32-bit applications, because that's what 99% of you guys are going to use it for. Features and technologically enhanced wobblygongs are one thing but, let's face it, all we really care about is whether or not it beats the Pentium 4.

Unfortunately we didn't have the standard Athlon 64 for our review, so all results are from the gamer oriented Athlon 64 FX-51 CPU, which runs at 2.2GHz. We'll check out the standard Athlon 64 as soon as samples become available.

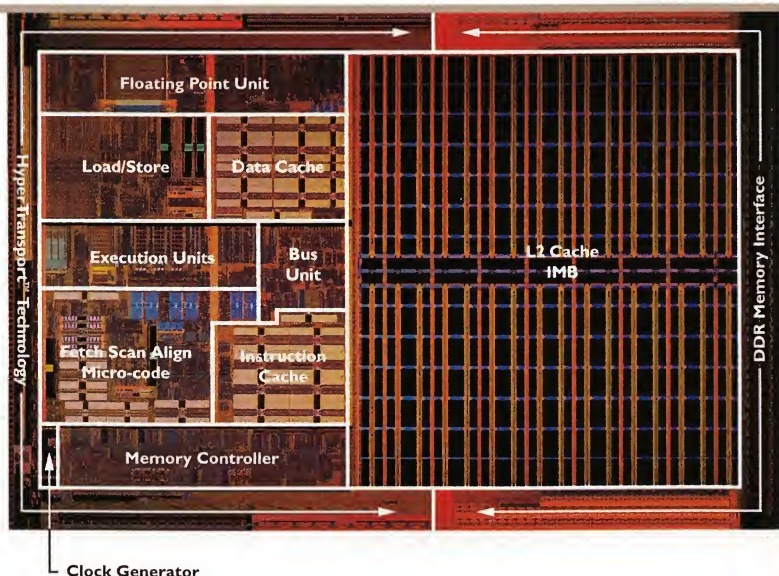
Our Athlon 64 FX-51 arrived in a tricked up Cooler Master case, complete with SATA RAID, 1GB of registered DDR400 memory, an nForce 3 PRO motherboard and a GeForce FX 5900 Ultra. It even had a Neon light in it - a first from AMD. Intel will probably play catchup by now installing a strobe and fog machine in its review systems.

We promptly pulled it apart, and installed our own testbench components (a 160GB Seagate SATA hard drive and RADEON 9700 PRO), leaving only the original nForce3 Pro motherboard, registered DDR400 memory and the Athlon 64 FX-51 CPU. For the purposes of



# **The World's Fastest Gaming CPU**

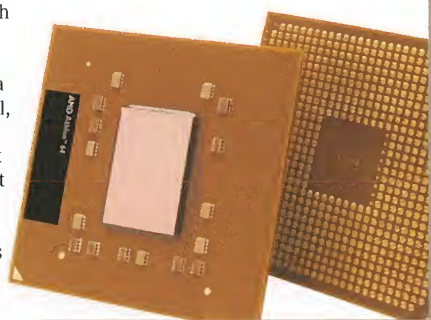




comparison we put together a Pentium 4 3.2GHz system on the 875P chipset, with 1GB of DDR400 memory and the same video card and hard drive as the Athlon system. Both machines were treated to a fresh install of Windows XP Professional, with Service Pack 1, DX9.0b and the Catalyst 3.7 drivers. It must be said that the Athlon system ran perfectly, without a single crash during every one of our benchmarks. Very reassuring.

The first benchmark off the ranks was the synthetic test SiSoft Sandra Standard. Normally we try to avoid synthetic benchmarks, and after running the CPU tests we were reminded why. The Athlon 64 FX-51 was beaten in the arithmetic, multimedia, memory bandwidth and cache benchmarks by the Pentium 4, suggesting that this processor didn't have the oomph to take on the big boys. But what a different story the game benchmark results told.

Take a quick peek at our lovely benchmark graphs, if only to recognise the many hours our lovely designer slaved over them. Notice something? That's right, the Athlon 64 FX-51 beat the 3.2GHz Pentium 4 in every single game benchmark that we threw at it. None of the wish washy, flip flopping results like those seen between the RADEON 9800 PRO and GeForce FX 5900 Ultra here folks.



## 3DMark03

While the CPU test 2 results were only a single frame per second apart, the CPU test 1 result was much more impressive, with the Athlon 64 FX-51 reaching a 34% higher frame rate than the Intel system. This helped it to record an overall CPU score that was 21% higher than Chipzilla's offering.

## UT2K3 [H]ard OCP CPU

Quite possibly our favourite benchmark, the results from this test were simply pants-wettingly good. We thought the Athlon 64 FX-51 had done a Stirling job in the 3DMark03 tests, but when we saw that it performed 49% faster than the P4 in the UT2K3 tests we had to pinch ourselves, have a strong coffee and rerun the tests to confirm the results. Again and again the same frame rate popped up before our unbelieving eyes. It was right about now that we started to realise that this was one hot little CPU we had in our hands. Well, not in a literal sense, as 39C is relatively icy, but you know what we mean.

## Serious Sam

We usually use Serious Sam: SE - Valley of the Jaguars demo benchmark for video card testing, but when it's run at 640 x 480 resolution at the "normal" graphics setting, it's also a capable CPU test. Once again the Athlon 64 FX-51 pooped on the Pentium, performing 30% faster. When will this dream end, we started to ask ourselves?

## Jedi Knight 2

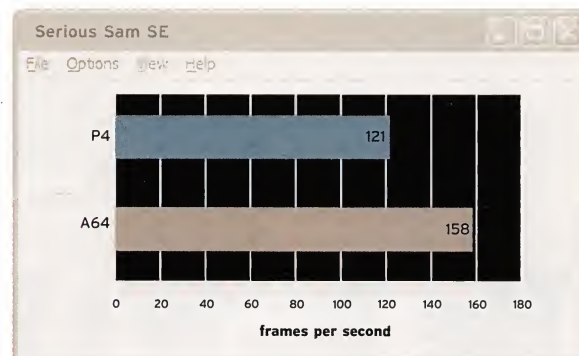
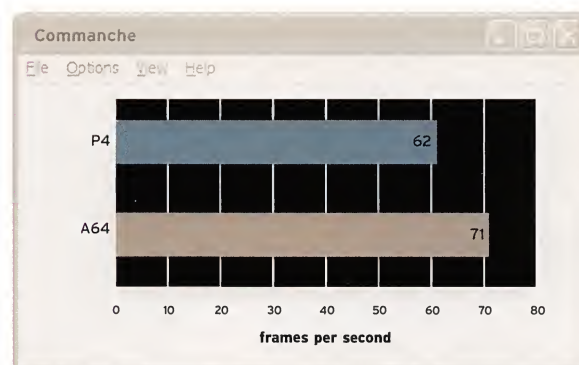
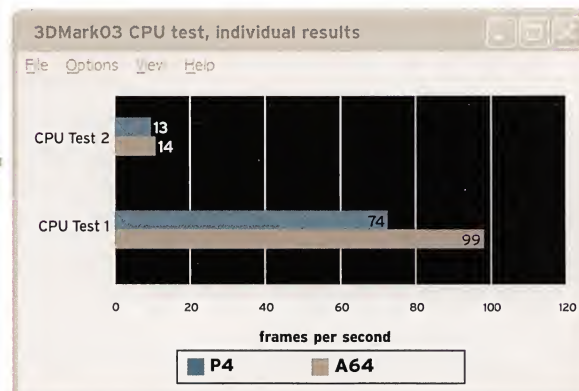
This Quake 3-engined demo purrs on the Pentium 4, which has traditionally had an



advantage over AMD systems in this test thanks to its SSE2 support and higher memory and frontside bus bandwidth. Now that the playing field had evened out with the Athlon 64 FX-51, we were keen to see if AMD had caught up. Well, not only did it catch up, but it managed to beat the P4 by 18%. Not as impressive as the other benchmark results, but it's still faster than the existing holder of the performance crown.

## Comanche 4

You guessed it, the Athlon 64 FX-51 won this round as well, performing 15% faster



## OVERCLOCKING

Brand new CPU architectures tend to overclock rather well (what an understatement), so we were looking forward to pushing the Athlon 64 FX-51 as fast as it could go. Unfortunately, we were unable to overclock the CPU by a single MHz. We gave AMD a quick call to find out what the story is, but unfortunately they gave us the old "we don't condone overclocking, blah, blah" line. Stay tuned, because we're going to overclock this sucker in the near future, regardless of whether or not we break several state and federal laws in the process!





than a chip that was running a whole gigahertz faster than it. Once again the old frequency equals better performance myth is shattered.

### Quake 3 Arena v1.32

By now we were convinced of which CPU would be hitting our upgrade list come Christmas time (provided Prescott doesn't measure up), but thought we'd throw one final benchmark at it to see if Intel could win a single round. Quake 3 Arena is still widely seen as a great indicator of performance, and it's a test that Intel usually owns. Not this time around. You can't really complain when the Athlon 64 FX-51 reached a performance level 21% higher than the Pentium 4.

There's no two ways about it; the Athlon 64 FX-51 is the fastest CPU currently available for your games. If you don't believe us yet, spend a little time staring at our benchmark results, and you'll soon be a believer. Time will tell how fast the standard Athlon 64 is, but rest assured it won't be as good as the FX-51; here's hoping it isn't too far behind.

Not only is the FX-51 fast, it's also a cool CPU, meaning it'll be perfect for those seeking a quiet PC. Perhaps most astonishing of all is the fact that this CPU runs at a lowly 2.2GHz, so AMD should have plenty of headroom up its sleeve to bring on ridiculously high frequencies in the future.

However, there are two points that are going to make most potential buyers rather wary of making the switch to the FX-51; its price and upgrade path. Check out our boxout for the future of the platform, or to be precise, the total lack of information from AMD regarding this. At least Intel is kind enough to let us know when their existing platforms are going to be phased out, a lesson AMD would do well to learn.

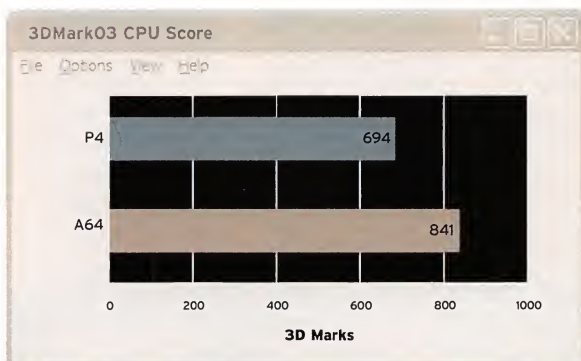
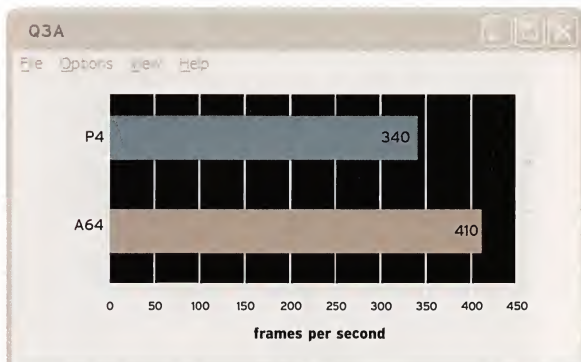
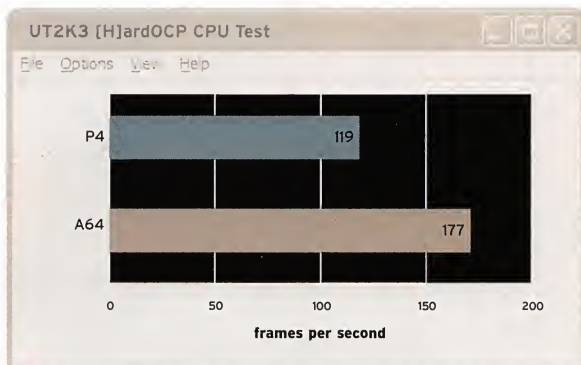
Regardless of the lack of info on the future of platform, pricing alone is probably going to be enough to prevent most from purchasing this CPU. We were given the US price per thousand units, and spoke to a retailer to see how this translates into a street price. Now, get ready for this, as these kinds of prices are unheard of for AMD CPUs. How does \$1400-1500 sound to you? Yes, ludicrous, indeed. Consider that you can purchase an

### UPGRADE PATH

There have been concerns that the socket 940 design on the Athlon 64 FX-51 won't be in use for long, meaning you'll probably have to purchase another motherboard for Athlon 64's released next year, so we asked AMD about how long the existing socket design will be in use. We got the following, somewhat cryptic answer "This launch is about the release of a new processor family and the new platforms from motherboard / chipset vendors. As AMD does not release platforms, it cannot really comment on the end-of-life of a platform that works with a processor that is yet to be officially released." Now, considering in the past AMD has been happy to go on about how their Socket A design will be used for the long term future, we can't help but be a little worried about their reply to our latest query. What does this mean to you? Well, if you purchase the Athlon 64 FX-51 today, chances are you're going to have a limited upgrade path in future. Slightly worrying, isn't it?

Intel CPU at a fifth of the price, overclock it and still get performance at around 75% of the FX-51. Do you really want to pay five times as much for 25% better performance, or 50% better performance in the best case scenario? Didn't think so. Hell, if you can afford it, go for it, but for the other 99.846% of us, this price is waaaaay out of our price range. Thankfully, prices will drop over the next six months, but until then the FX-51 is simply prohibitively expensive, and we're pretty sure that the FX-51 will never be a 'budget' processor in the same league as the earlier Athlons.

How long AMD holds onto its impressive lead is another matter entirely, as Intel has its Prescott waiting in the wings, ready for launch at Christmas. Until then the Athlon 64 FX-51 has regained the crown that the original Athlon so rightly won, as the world's fastest gaming processor. But boy is it expensive...





# GAMES IN REVIEW

**T**hings are looking up! After the dismal showing in last issue's review section, at least this month's list just squeaks into double figures. Barely, mind you, but ten's better than six. Not sure if the quality's any better, but there's some solid entertainment on offer here.

Halo is a superb game. On Xbox. Perhaps, dare I suggest, the finest first-person shooter in existence (though I'm sure Bennett would disagree!). It's also a superb game on PC. But, truth be told, it's not quite as good as we'd hoped. Everything that made the Xbox version so exhilarating is in place – the expertly paced action, the peerless weapon balance, the formidable enemy AI, the intricately sculpted battlefields. Yet the performance issues contrive to irreparably damage the whole experience. It's still a great game, just not the technical tour de force it was on Xbox, nor the one it once promised to be on PC all those years ago. We deserve better. But I'd still encourage you to buy it. Damn you, Bungie, and your design genius!

Elsewhere, Enclave and Mace Griffin also prove that porting from Microsoft's green machine to our platform of choice isn't perhaps quite so straightforward as we'd been lead to believe. While, to our immense surprise, Tony Hawk 4 shows just how a port should be done.

Next month: Half-Life 2! Maybe!

**David Wildgoose**  
Editor



**69** Game of the Month  
Halo

- 72 Space Colony
- 74 Conflict Desert Storm 2
- 76 Enclave
- 78 Mace Griffin
- 80 Shadow Magic
- 82 Zoo Tycoon
- 83 Starsky & Hutch
- 84 Ford Racing 2
- 85 Tony Hawk Pro Skater 4



GOLD AWARD	HIGH DISTINCTION	DISTINCTION	CREDIT	PASS	FAIL
The ultimate accolade. A game that receives a Gold Award is an essential purchase, and the only excuse for not owning it is either not having a powerful enough PC, or not having a PC at all. Or arms. It represents a new direction in gaming, a new benchmark against which all others will be measured. It defines its genre, or creates a new one. It is gaming. You must own it.	This is the finest in gaming. A fresh concept, a perfect execution, a meaningful extension to a tried and tested format, one or all of these are required for this score. We strongly recommend the purchase of each High Distinction game, but extremely fussy gamers may want to skip those HD games that don't also receive Gold Awards.	An intriguing new concept or a bold new direction that manages to pull its new trick off with a reasonable degree of flair. You will be impressed, at either the graphics, the gameplay or some other new element that you may not have encountered before. Or perhaps this is a familiar gaming concept, but one executed so well it's almost – but not quite – an essential purchase.	Solid, playable, largely bug-free, entertaining and maybe even a bit unexpected, these are the hallmarks of a game of Credit. You may have seen it all before, but you won't mind, because a Credit game does what it says on the box – it plays well and it keeps you hooked. An essential purchase? Not necessarily, but worth consideration.	A game that receives a pass is playable, but its concept may be flawed, its extras may be lacking or its graphical enhancements may have fallen off somewhere in a lengthy bug-fixing process. And bugs there may be, although in the end the game will, as we say, work. Purchase if you're curious, but discerning gamers will probably look for something more substantial.	There are more than 5000 games released each year. Some are gems. Some are merely unremarkable. Others are nothing more than a shameless grab for cash. Graphics will be rudimentary and gameplay will be worse. If you see someone considering a game that has failed, gently take them by the elbow and hurl them out of the shop. It's your duty as a good citizen.
<b>90+</b>	<b>85-100</b>	<b>75-84</b>	<b>65-74</b>	<b>50-64</b>	<b>0-49</b>





# Halo: Combat Evolved

PC gamers finally get their turn

Developer: Bungie Publisher: Microsoft Distributor: Microsoft Price: \$89.95 Rating: M15+ Available: Now

**I**t's hard to write a review for a game like the PC port of Halo. It's a task that most of us game reviewers dread. Why should reviewing the port of what is considered to be one of the greatest FPS games of all time be approached with such trepidation you ask? Simply put, it's the type of review that is going to make you enemies. There's two schools of thought surrounding the port of the game - the first being that if the game was so good on Xbox it would have to be twice as good on PC due to the advanced specifications, and the second that Bungie should die for ever "selling out" to a dirty console. No matter what you say, one of the groups is bound to start an uproar, usually that we've "sold out" to Microsoft. To make matters worse, there's little people don't know about the game, either through having played it to death themselves on Xbox or from all of the pre-release hype and information. They know the plot. They know about the advanced enemy AI. They've heard about the vehicles. All that we, as reviewers, are left with to really look at is usually the last thing that we want to point out in any given title (apart from those developed by the Arxel Tribe), the flaws, of which there seem to be many. This would be an opportune time to point out that Halo is not a bad game - far from it, but

considering the lengthy development time it does come as something of a disappointment.

For anyone who has been living under a rock or has somehow otherwise managed to avoid the storm of publicity and positive feelings that is the Halo bandwagon, the plot goes a little something like this. Players take the role of the Master Chief, a military cyborg with PhDs in kicking arse and taking names, charged by the commander of an ailing human space fleet to protect the ship's most valuable asset from the marauding Covenant; a cadre of alien races with which the human race is at war. This asset, a highly advanced and rather feisty AI has knowledge of all human troop movements, fleet deployments, tactics and the like so having her fall into the hands of the enemy would be catastrophic to the war effort. Our heroes are lucky enough to make it to an escape pod on time and rocket down to the surface of Halo, a giant artificial ring-world that the flagship was investigating before

being so rudely interrupted by the Covenant. Once on the "ground" it's up to the Master Chief to find other human survivors, kick Covenant arse and discover the actual use of the Halo, a device that the Covenant seems convinced is actually an ancient superweapon.

One look at Halo on either platform and it's easy to see why it has become one of the most warmly welcomed and anticipated titles around. Each level is huge and features a number of dynamic objectives, as well as drivable vehicles and some of the best AI yet seen in a game. Enemies act like intelligent foes, using cover, flanking tactics and suppressive fire. Hell, some of the smaller aliens even show totally believable cowardice - blow away all of their friends and don't be surprised to see the survivors drop their weapons and run away screaming. No matter how good the enemy AI, it pales in comparison to that of the allies. During a number of missions you'll find yourself fighting along side of some human marines

**While exploration and puzzle solving are important aspects of the game, there is more than enough action to keep all but the most twitch-oriented gamers happy**

## SYSTEM

### NEED

1.2GB HDD  
32 MB videocard  
8x CD-ROM  
56.6kbps modem

### WANT

3GHz CPU  
512MB RAM  
1.2GB HDD  
128MB videocard

### MULTIPLAYER

Yes. Better than Xbox

### ONLINE

[www.microsoft.com/games/halo](http://www.microsoft.com/games/halo)  
The official site for all your Combat Evolved needs.





who act for all intents and purposes like other players. Instead of simply following the player, the allies will flank positions, fall back to protect the rear, concentrate fire or lay down a blanket of suppressing fire - all of their own accord.

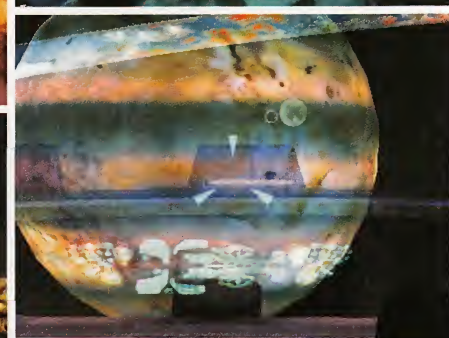
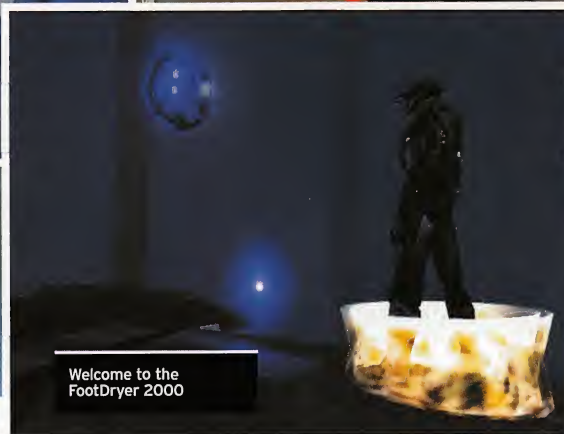
Without a doubt, Halo is a good looking game, featuring some of the best character and alien designs you're likely to see until Half-Life 2, huge environments, brilliant looking vehicles and some very impressive particle effects (plasma grenades are pretty). Just don't look too close. Although initially developed for the admittedly powerful Xbox console, it doesn't look as though the developers of the PC port have done anything graphics wise apart from give players the ability to turn off the DX 8.1 features, bump up the resolution and up the refresh rate. Whilst this may sound

like a good thing the actuality of it leaves a little something to be desired. Bumping up the resolution is all well and good, but unless you've got an extremely high spec machine be prepared for the vast number of battles to be serious chug-fests and don't even bother about trying to get in a vehicle, as the third person perspective slows things down even more. The test machine used for the review, an Athlon 2000+ with 512MB RAM and a GeForce4 Ti 4200 should by rights be able to run the game at a fairly high resolution with all the details turned on, but it showed some serious framerate problems at 1024x768. To get around this problem, the good people at Bungie have kindly included a framerate limiter that sets the maximum framerate at 30 - just like the Xbox version. Whilst it is possible to turn off the

## HALO IN D MINOR

Halo sounds great with an excellent score and some truly inspired voice acting. Whilst the Master Chief sounds like a fairly stereotypical leatherneck, some of the minor characters are absolutely wonderful, a highlight being a hovering robot that guides the Chief through an ancient facility designed to stop the Flood. Throughout the journey the floating ball keeps up a constant litany of useless information like a tour guide, occasionally stopping to look at some invisible guest and say, "Oh, Hello". Also keep your ear out for the numerous Australian accents amongst the Marines.





Little gripes aside there is one thing that makes the PC version of Halo stand out from its Xbox counterpart - multiplayer. Though the Xbox game has an excellent multiplayer

component it's not a patch on the PC version. Featuring 20+ maps and a huge number of game modes, Halo really should have something to offer for everyone. Available game modes range from old standards such as deathmatch and capture the flag all the way through to some new spins on old ideas, such as Crazy King, a king of the hill style game in which the hill is constantly on the move. One game mode we have not been able to test as yet that sounds like an absolute blast is Race. Each player has infinite respawns and must make their way around a convoluted race track three times to win the game. As most of the multiplayer maps support vehicles we envisage that this will be a mode that will be getting a lot of play. The only real downside to multiplayer is that games only support a maximum of 16 players due to the size and design of the maps.

Daniel Wilks



limiter it does come with a caveat stating that higher rates may cause horizontal tearing. Although it didn't occur too frequently, the aforementioned tearing did rear its ugly head more than once.

Framerate issues aside, Halo features some of the best animations you're likely to see for some time yet. Instead of simply moving the arms and legs of different models on sliding vehicles across the relevant surface, Bungie has invested each model with a sense of weight and solidity not usually expected in a game. As a result, everything moves in such a realistic way that you can't really imagine them doing anything else. Small Covenant grunts run around and bounce excitedly whilst larger elites stand tall and proud and the terrifying hunters lumber around

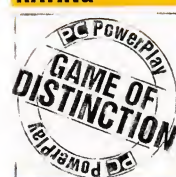
like elephants in armour. You never once question how they move. It's just natural.

One complaint levelled at Halo on Xbox was that it felt like a PC game trapped in a console. Although this complaint usually came from the crowd who liked to point out that the game was initially going to be developed for PC and Mac before being "stolen" by Xbox, it does ring quite true with the PC port - it does feel like a PC game trapped in a console, only this time it's being played out on the PC. That sentence does actually make sense if you think about it. Although transferred across to keyboard and mouse the control still maintains that slightly fuzzy feel common amongst console shooters that makes up for the innate lack of accuracy inherent in using a gamepad. Although visually pleasing, the enormous crosshair features on most of the weapons illustrates the problem well - if any part of the target intersects with any part of the crosshair there's a good chance you'll hit it. Whilst this is all well and good during the frenetic massed battles that frequently occur, it really does make the extreme accuracy of mouse and keyboard kind of redundant. After areas load, the mouse seems to tend to become quite laggy for a short amount of time. Usually this isn't a problem but later on (especially during the flight from the Flood) levels often start during combat, causing no end of frustration.

## DON'T DRIVE ANGRY

Halo features a number of drivable vehicles ranging from the recognisable Warthog ATV to combat hovercraft, tanks and light aircraft. The vehicles are seamlessly integrated into the gameplay and utilise a very intuitive control scheme. Every vehicle uses mouse-look to steer and the W and S keys to accelerate and decelerate. Most of the vehicles mount weapons that can be triggered either through by the mouse or by an AI gunner.

## RATING



### FOR

Excellent and intuitive AI  
Great missions  
Multiplayer

### AGAINST

Framerate issues  
Fuzzy controls  
Mouse lag

### OVERALL

With such a long development time you would have expected Bungie to iron out the graphical glitches.

80





# Space Colony

A firecracker up the proverbial for sims

Developer: Firefly Studios Publisher: Take 2 Interactive Distributor: TBA Price: \$89.95 Rating: G8+ Available: October

## SYSTEM

### NEED

P800  
64MB RAM  
4MB Direct X 8.1  
videocard  
850MB HDD

### WANT

1.2Ghz+ CPU  
128MB RAM  
32MB videocard

### MULTIPLAYER

No

### ONLINE

[www.redcolony.com](http://www.redcolony.com)

Real space colonies might be a ways off, but the folks at Red Colony are pushing for a little dome of their own on the red planet. Hopefully, they don't model the psyche profiles of the new colonists in this game.

**T**here's a drunk cow-girl controlling your power systems. As the folly of having a bar right next to the Control Centre sets in you grab her and she pleads, "Can't I just stay here and play Stronghold?"

Stronghold is from FireFly's back catalogue and was released in 2001. This game is set in 2153. It's never a good sign that the person keeping your station alive would rather play a game that's 152 years out of date than do her job.

Space Colony is like a cross between

the Sims and SimCity... only it's in space and on LSD. FireFly combines the Sims notion of every-day character management, with SimCity-style space station construction and then adds tongue in cheek humour and colourful characters.

Just how colourful? Well, imagine that scene from any number of movies where the normal housemates have to interview people for the last bedroom in their flat and every distinctly disturbing and disturbed freak in the city turns up. Yeah, that's your crew in a nutshell... the tuna that John West rejected. You have a dreamy hippy, a blonde bimbo shopaholic, a gluttonous Norwegian biker, a mad scientist, a hill-billy, an old Japanese Cybernetics specialist who could very well have just escaped from Bladerunner, as well as 13 other assorted screwballs.

It's obvious that the kids at FireFly played the Sims and loved it, but felt it could do with a little more oomph, fuzzy aliens and characters ranting at each other in an understandable language.

## Port in the Storm

In amongst all of this is the likeable heroine on the piece, Venus Jones. She's as tough as she is beautiful and she's planning to retire at the ripe old age of 25, if only she can make this one last, big, score. Unfortunately, the head of the corporation has taken a special

interest in her latest little operation and that means unreasonable work schedules, outlandish schemes for economic domination and suicide missions.

The campaign mode is just one element of the colonial goodness. There's also a game editor, Galaxy Mode (which lets you string together a bunch of scenarios in whatever order you choose) and Sandbox.

The word "Sandbox" underplays the importance of the free-form element of the game. It gives players a chance to indulge their Sim-side. Here you can try your hand at beautiful space architecture and lovely rings of interlocking habitation modules. You can make the interiors a joy by using the extensive holo-art and pot plants on offer or you can make the biggest casino in space or even create an amusement arcade that will make Disney World look like a Timezone. Once everything is in place, you can bring in tourists so you can see everything in action.

If building isn't your thing, then you can work the Sims-side and get in on the Space Colony Soap Opera; complete with brawls, schemes and love affairs. In the relationship menu you have a choice of six activities that you can ask characters to share (like getting a drink or dancing), and if you get it all right they can become special friends and their happiness bar goes to max as they wander around in a

## BECAUSE I SAID SO

One of the interesting things about Space Colony is that some of the characters are really odd, not just in background but in behaviour. Some just seem to do the opposite to whatever you tell them, which is cool because it gives them a sense of personality but it makes gameplay uncertain. You might have the best plan in the world but you can be defeated because Daisy won't play ball even though you have all of her happiness ratings in the green. Luckily some characters like Venus and Dean are really good sports, even when they've been a bit neglected, so it all factors into the strategy of the game.





love-haze. Of course, without maintenance it can all fall apart... just like the station.

## Controlled Chaos

The campaign, on the other hand, feels more like a classic realtime strategy game than SimCity. If there's any weakness to the game's design it's that you do sometimes feel like you are just playing through a strange version of StarCraft where all of your units are demented heroes. Fortunately, the bizarre, but-matter-of-fact humour keeps the missions feeling a little more intimate and Sim-like.

Trying to get Bob out to the Space Chicken Extractor and Candy off of the Virtual Shopping network vie with erecting force field posts, placing defence lasers and collecting a variety of resources.

On the easy missions you have time to slowly inch forward and set everything up in a neat order, but as missions progress, you'll find that you have to focus on particular areas of the mission and then quickly jump back and fill in the gaps (like making sure everyone has a bed). Things get more hectic because as soon as you miss one thing it tends to have a domino effect that can bring you undone really quickly. Say your power goes down because Tammi is busy scratching her butt, and your defence lasers go off-line.

This in turn lets Gremlins scamper into the base and toy with a bunch of your food and recreation equipment. You rush Venus onto power duty only to find that your maintenance guy is too depressed to do more than half an hour's work because he's hungry. Unfortunately, without fixing the Mess Hall he can't get any food. If you build another Mess Hall you have to gather more Nutrients. The problem is your best Nutrient gatherer is crying about the death of disco (or at least the disco machine). Since Venus is working power that only leaves the guy on the Oxygen controls. It looks like you'll have to run Venus off her feet once you have some power and hope nothing else goes wrong. Did Dean just tell Greg that his "Mumma is so fat that she puts mayonnaise on aspirin"? Are those Mechaniods off the starboard bow? It's going to be a long day at the station.

## Getting it Together

With the right mission plan, the pause control and a sense of humour you can make it through even the toughest mission without ever having a punch up or a major meltdown, but even the screw ups are fun. You really want to hit a balance somewhere between the work politics of Futurama, the Starship Enterprise and Red Dwarf.

The interface is clever and helps

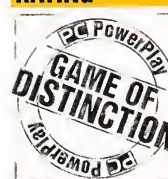
managing the game no end; you can read character's psych profile and likes and dislikes so you have a good idea what you need to do to get them motivated (which is a god-send) and you can set a secondary job for them to tackle if their primary role is already being filled (which helps planning immensely and covers those part-time jobs without too much tinkering).

Ultimately, Space Colony can be a frustrating juggling routine but it's a fun kind of frustration. The characters with their dozens of funny little sayings, the muppet-style aliens, the evil Monty Burns-esque corporate head and objectives like building an 18-hole golf course all keep Space Colony humming merrily.

If you liked the idea of the Sims but you want something with a little more direction and personality, or you just want to build the biggest Space Casino/Zoo/Golf Resort ever, then Venus and her crew could be just the party you're looking for.

Macrh Stepnik

## RATING



## FOR

Personality  
Colour  
Complex strategy

## AGAINST

Smidge chaotic  
Tammi

## OVERALL

Sims in space and on LSD. Clever, colourful, cheeky and chaotic.

# 80

## HAPPINESS IS A WARM GUN

Each character has happiness indicators (like in the Sims) for Recreation, Social, Hunger, Rest, Hygiene, Money and Medical, with each requiring a different activity. Individual characters also have different needs which cause certain scores to plummet, for example Slig eats like a horse, Doctor Dean needs to be clean, Nails needs a warm gun in his hands and Tammi needs people to take her abuse. Beyond all of this, some characters just hate each other, so you find yourself not only trying to set the best teams to cover the work that needs to be done, but also trying to keep Tammi and Slig at opposite ends of the station.





# Conflict Desert Storm II

## Back to Baghdad

Pity the poor Saddam.

Developer: Pivotal Games Publisher: SCI Distributor: Atari Price: \$89.95 Rating: MA15+ Available: October

**Yes, your favourite guys from the first game are back again, and the tour bus is still on the road...**

### SYSTEM

#### NEED

P500  
128Mb RAM  
32 Mb Videocard  
DVD drive

#### WANT

PIII 1Gz+  
256Mb RAM  
64Mb Videocard

#### MULTIPLAYER

No

#### ONLINE

<http://brillshas.8m.com/>  
Read all about those likely lads from the British S.A.S. Leave Delta Force for Chuck Norris movies.

**D**o you want to blow things up and stick it to Saddam, but find the thought of playing a game set in a war where the body count is still rising a little tacky? Well, this might be just the thing.

Conflict Desert Storm II whisks you back in time to 1991, to the first outing that a Bush launched against Iraq.

This is not game of front-line battle, this game that takes place 300 kilometres behind enemy lines. Players choose whether to be a part of the U.S. Delta Force or the much cooler British S.A.S., and then have their squad rolled out in the right garb and accent.

Either way, you get a four man squad with Bradley leading the band; Connors on the heavy weapons; Foley behind the sniper scope and Jones on explosives. Yes, your favourite guys from the first game are back again, and the tour bus is still on the road.

Conflict Desert Storm II has gone for a little bit of everything and combines intense first-person firefights with vehicle combat; exploration with stealth missions; and uses

high-explosives and fairly-realistic missions to tie it all together.

### Let's Get Tactical

The focus of the game is very much squad-based tactics. You can try hammer the FPS side, but that's not how this baby is geared. While the heavy fire will cut you down pretty quickly, the cumbersome controls are the real killer.

You have to switch to an inventory mode and scroll around to change weapons or even to switch firing modes and that's going to get you dead in a firefight. Other than that, bad guys seem to shoot around the edges of things much better than you do and characters have a nasty habit of getting tripped up on the edges of rocks and poles.

If you are going stealth, you'll also find that you can't quite hear guards well enough to listen for their position and you'll find that you get spotted by guys in fairly unlikely places. Things get a lot better if you sneak up a second character as a spotter to keep track of enemy positions as you advance.

This game is all about teamwork. You can cycle through and control any of your troopers at any given time and you have a basic range of commands like follow, advance to a point, fire at will and hold your fire, which you can issue to individuals or the whole team. The follow

command is useful as everyone charges along with you, guns blazing, but you are better off controlling each troop when you want to edge forward.

Sometimes I would see one character cut down while the guy beside him stood a step away from being able to help out, likewise I watched troops get shredded because they wouldn't crouch or lie flat on their own.

Once a guy is placed he's pretty set but you really need to put your troops just where you want them ... don't expect much thinking beyond instincts.

### PRECISE EXPERIENCE

One of the elements of squad-based strategy games is pretending your guys are real and that you have to keep them alive and kicking at all costs. This leads to refining not just your shooting but your strategy. To pour fuel on this fire the experience system not only tracks how well you went in the mission, awarding medals, it also tracks number of kills, the number of times you were dropped and accuracy ratings. Players also develop their skills based on how you use them, meaning that your troopers grow into the roles you give them.





extracting a downed Delta Force unit or penetrating a city and taking out key mainframes and radar dishes.

There are only a couple of paths through the levels and most of the mission time is spent figuring out how to crack tough tactical obstacles like well-placed armour, swooping gunships, ambushes, interlocking guard towers, or how to infiltrate areas packed with sweeping searchlights and patrolling guards.

As you progress through these levels new objectives are barked in your direction which send you scurrying onwards. The overhead map and objective screen is well laid-out and keeps you moving in the right direction – which is really handy in the chaos of war.

Interestingly you only get two saves per mission, which adds to the tension, while usually being just enough.

You could probably race through this in 20 hours on the easier difficulty levels and the lack of multiplayer options seems strange, but since the game is designed for players to go for the 'perfect' mission you'll probably end up doing more savouring and replaying than racing.

## Riders on the Storm

Going for this flawless command of your elite special forces unit against all odds is what Conflict: Desert Storm II is all about.

Edging your troops forward, covering one after another, and then carefully placing them into a fire fight or using smoke to circle behind a strong point while your sniper clears the way, is a buzz.

Slowly creeping forward, creating fields of fire that cover each advance, sniping or silently taking out guards and flanking enemy emplacements while you pin them down with machinegun fire, and circling tanks so you can hit their weak rear armour is what this game is all about, and it's a lot of fun. This is definitely a thinking shooter.

## Tools of the Trade

Even something as subtle as the smoke grenades can completely change the complexion of an encounter. The blanketing smoke can turn a kill zone into an escape route or divide insurmountable forces.

Beyond these grenades, players have access to a host of weapons from bowie knives to silenced submachine guns and even laser target designators for calling in air strikes.

What's more, if you don't like, say, the close combat capabilities of your sniper you can have him pick up an AK-47 from a guard post. Discovering an extra light machine gun or digging up stashed anti-tank weapons can make all of the difference to a level. Scrounging not only encourages exploration but it makes your troops more versatile to boot, and it works well.

## Level Playing Field

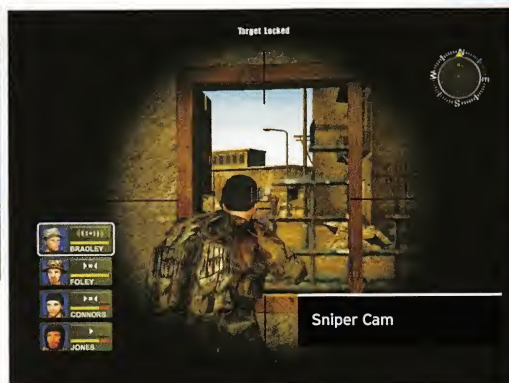
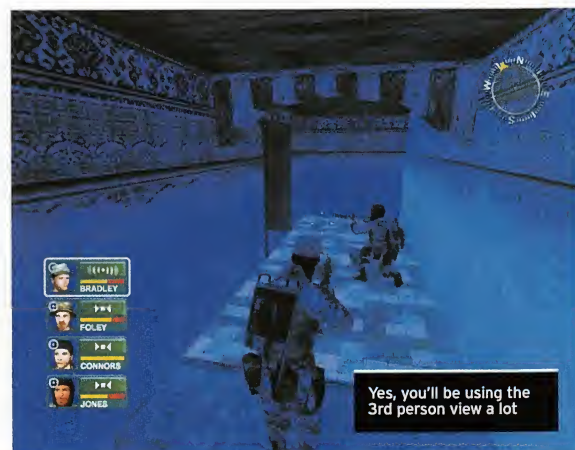
There are only 10 levels of in-game action but each of these is at least a couple of city blocks in size. Most of them break into scenarios encompassing two or three missions, like finding and

Things start to get a little less rosy when you start looking at the components one at a time. The squad commands are no-where near as good as the ones you'd find in something like the Rainbow Six games, the team A.I. is a little too limited and, if you're caught out of position, the controls clunk like a diesel engine that needs a few good whacks.

That's not to say that Desert Storm II is bad at what it does; it's just got a few jagged edges that can punish the unwary.

Basically, if you dug the first one, like the behind-Iraqi-lines setting or just hanker for more squad-based action, then come on in, the desert is fine.

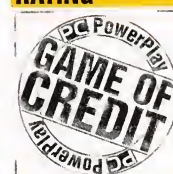
Timothy C. Best



## MEDKIT RESURRECTION

The realism of the game floats between sim and arcade and the balance is pretty good. Arcade elements like being able to revive troops from howitzer shells with a medkit and being able to take several AK rounds before going down help keep the action moving forward while things like head-shot kills, being able to shoot out lights and your accuracy decreasing the faster you move keeps you in a tactical frame of mind. The only area where this fun over realism angle really hurts the setting is when you can pick off a guard standing right next to someone, or leave bodies out in the open without raising an alarm. It stops a lot of the faffing around but feels like cheating...

## RATING



## FOR

Squad-based strategy  
Multiple objectives  
Big explosions

## AGAINST

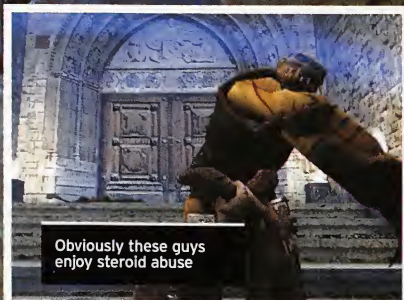
Clunky controls  
No Multiplayer  
Dense teammates

## OVERALL

Serious squad-strategy, but it goes clunk in the night a little often

71





Obviously these guys enjoy steroid abuse



# Enclave

Ultimately it all comes down to chicks in chainmail

Developer: Starbreeze Publisher: Black Label Games Distributor: Atari Price: \$89.95 Rating: M15+ Available: Now

## SYSTEM

### NEED

P2-450  
128MB RAM  
32MB 3D videocard  
500MB HDD

### WANT

P3-900  
256MB RAM  
64MB 3D Video Card

### MULTIPLAYER

No

### ONLINE

heisse-eisen.de  
For all your armour/bikini needs. The site may be in German, but pictures of women trying to look provocative in uncomfortable steel undergarments are universal

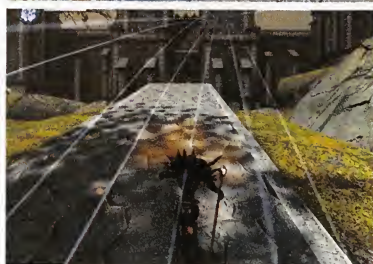
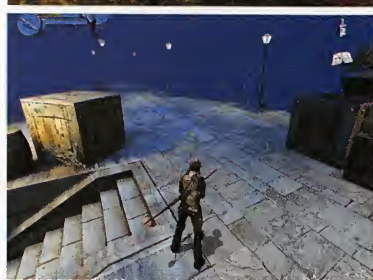
## RATING



### OVERALL

Good unclean fun for the most part, Enclave is a great port of a sketchy title.

70



**W**hy is it that in fantasy art, games or films, women's armour never seems to cover vulnerable areas such as the arse or cleavage, instead accentuating or framing them, making such body parts more of a target and area of attention than they ever were before? In case you haven't guessed, that's a rhetorical question, but one you'll most likely ask yourself more than once during the course of playing the PC port of Starbreeze's Xbox slash-em-up, Enclave. Split into two separate campaigns, Enclave charges players with either saving the world of generic-shattered-empiria from the evil forces of the Dreg'atar (as we all know by now, anyone with an apostrophe in the middle of their name is either a Klingon or evil) or throwing in your lot with the forces of darkness to wipe out the good guys.

Enclave is a fairly straightforward game - fight your way through the 15 or so levels per side, killing anything that gets in your way, saving the odd NPC and collecting treasure with which you can buy better equipment between missions and unlocking new playable characters. Although straightforward, Enclave is anything but easy, throwing players into the deep end instead of letting them learn the intricacies of control at their own pace. Not that it's necessarily such a bad thing - if a game's too easy you tire of it fairly quickly. Unfortunately, the game's reliance on waypoints, rather than user defined saves, means that more often than not you'll be playing through the same areas again and again as you fall victim to the myriad, nearly inescapable traps that litter many of the levels or the obscenely tough boss monsters. To make matters worse, the collision detection on attacks doesn't seem to be 100% as sometimes enemy attacks will simply ignore your shield (if you have one that is) or your attacks will harmlessly sail through your enemy leaving it unharmed. AI is

frequently patchy as well, especially with NPC character. Although it's not uncommon to run across enemies that will simply stand in the one spot and look around dully until they are dead, they are a good deal less frustrating than the NPCs that will sometimes simply forget to follow the player or get stuck in doorways. Fortunately, Enclave is one of those rare ports that does everything right in terms of control. Instead of having to rely upon a gamepad to make your way around the game world, Enclave on PC allows players to utilise the now standard keyboard/mouse control, making things a hell of a lot more user friendly.

Although something of a mixed bag as far as gameplay is concerned, Enclave is nothing but absolutely gorgeous to look at and whilst the majority of levels are fairly generic fantasy settings (temples, dungeons, towns), the level of detail and high quality of the textures really brings them to life. Character and monster design is equally good and the animations, though limited, are very good.

Daniel Wilks

## UNLOCKABLES

Aside from the standard characters available through each campaign, Enclave features four extra unlockable characters. Two of the characters, the golem and stone-gnome are unlocked by completing the light and dark campaigns respectively. The other two characters, a night-invulnerable warrior and a missile-equipped battle-droid are unlocked by finding all of the gold scattered throughout the game. Although playing as any of these characters is fairly pointless as they are practically unkillable, hunting through all of the levels to find every last bit of gold does make for a fun and addictive challenge.



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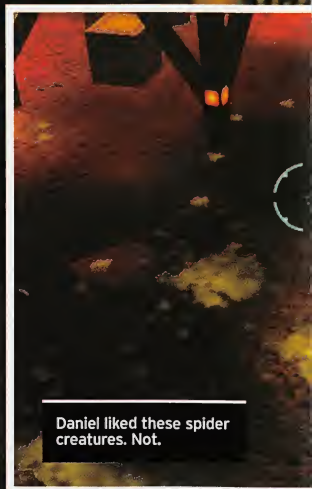
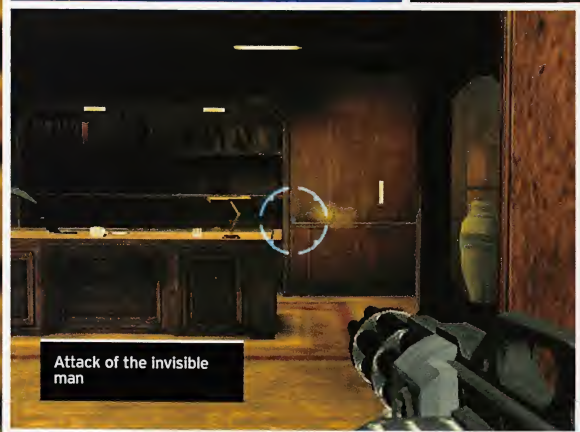
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# Mace Griffin Bounty Hunter

In space, no one can hear you groan

Developer: Black Label Games Publisher: Vivendi Universal Distributor: Vivendi Universal Price: \$89.95 Rating: M15+ Available: Now

## SYSTEM

### NEED

800Mhz CPU  
128MB RAM  
32Mb video card

### WANT

2GHz CPU  
256MB RAM  
64MB video card

### MULTIPLAYER

No

### ONLINE

[onworld.com/BHQ/](http://onworld.com/BHQ/)

If you're an anti-social bullying freak with an inferiority complex who couldn't make it as a cop then this is the place for you - Bounty Hunters Online. Thrill at the many stories of beating up unarmed people, whoop for joy at the weapons and cringe at all the bad grammar.

In the far future in the depths of space, the improbably named Mace Griffin patrolled the routes between planets, keeping the inky blackness safe for decent, law-abiding folk as the pilot for an elite Ranger squadron. Now, even though Mace was a pilot and should by rights have stayed with the ship whilst the crew were on away missions, for some reason during a routine mission Mace was sent in to the fray - not only as a combat troop, but as a recon scout, and you know what a recon scout means in FPS don't you? That's right, Mace was the only person who could save the day. Of course, everything went pear shaped and Mace was blamed and wound up serving 10 years of hard time on a prison planet. Fresh out of prison, Mace is a man looking for answers and/or revenge (it's never really made clear), working the fringes of society as a bounty hunter.

## Here we go again!

For the most part, Mace Griffin plays out as a standard FPS game, with our anti-hero being given a job, which will require him to kill a lot of people for no real reward (see boxout) and throw himself time and time again into the line of fire whilst wielding the standard assortment of weapons. In between FPS missions Mace is usually given a chance to use his

slightly rusty combat pilot skills in some space sim levels with such varying goals as, destroy all enemies, destroy the enemies and the fantastically different, blow up the enemies. With the right direction and well-implemented ideas, Mace Griffin could have been the equivalent of Halo meets Freelancer - unfortunately what we have looks a lot more like Daikatana meets Asteroids.

Whilst the level design is quite good for the most part there are some factors that will leave you scratching your head. One level has a secret area full of ammo and weapons but the only way out of it is to backtrack through the entire level to get back to where you were. Another level sees Mace riding on mine carts, a-la Indiana Jones. Whilst the cart ride is a bit of a hoot, once the cart stops the player is given absolutely no indication as to how they are means to exit the cart. The track is instantly fatal if you touch it so the only option left to you is to jump over the edge. This would make sense if the fall height weren't so obscenely high - more than enough to kill you on any other level. These strange decisions wouldn't be so bad if the AI was excellent but unfortunately this is not the case. The AI is functional at best and completely infuriatingly stupid in both the FPS and space flight sequences. For every time the

AI will try to flank you or effectively snipe there are a half dozen incidents of the enemy just standing around looking vacant whilst you kill them all one by one. During the space combat levels the enemy ships will usually simply fly straight towards you firing all the time, only occasionally manoeuvring in any clever way. A brief side note; Mace Griffin features what could possibly be the most annoying enemy ever created. Many of the mine levels feature small, fast moving spider-like creatures that are hard to hit and can kill you in one or two hits. To make matters worse they usually appear in groups of around 10 or more. Screaming and hair pulling ensues.

On paper, Mace Griffin must have looked like a great idea - marrying FPS and starship combat sounds like a blast. Unfortunately this marriage is kind of







Wow, a shooter with a chaingun. Revolutionary!



Tough guy kills pansy screenshot

like that of Michael Jackson and Lisa Marie Presley; all show, leaves people scratching their heads and destined for divorce. To add insult to injury, Mace Griffin also suffers from all of the hallmarks of a lazy port - fuzzy controls and a reliance on the bane of FPS gaming, save points. For the most part the

## BOUNTY HUNTER

Now, correct me if I'm wrong but aren't Bounty Hunters individuals who hunt down people with bounties on their heads? Apparently I was wrong - bounty hunters in Mace Griffin seem to be super-human killing machines often hired by what passes for the armed forces to complete the missions that the soldiers are too lazy to do. Why send in your squad of heavily armed and well-trained professionals to carry out an important and sensitive operation when you can hire an ex-prisoner convicted of treason instead? That definitely sounds like someone you can rely upon to get the job done.

controls are fine but their faults become very apparent during the middle of a firefight. Console FPS controls are by necessity a little fuzzy as it's impossible to achieve the same level of accuracy with a gamepad as it is with a mouse and keyboard. There's nothing wrong with that - it's the nature of the beast but when you port a console game to PC you expect a bit of optimisation for the system. Unfortunately most of the time the controls seem to display the same type of softness as they would on a console game, meaning for the most part that you only have to be semi-accurate to score a hit.

## I think I'm having deja vu

The accuracy issue is fairly easy to overlook in the long run as there is something that will have you tearing your hair out far more often - save points. All of the levels in Mace Griffin are big and filled to the brim with enemies all intent on sending Mace off to the big bounty

## THE DUMB FUTURE

The financial/legal system in Mace Griffin seems a little insane to put it lightly. During one of the first briefings, Mace is informed that it is actually illegal to pay an ex-prisoner for services rendered. This seems a little stupid, as the only source of income left to the convicted individual would be illegal, leading to a vicious circle of crime and punishment. To make matters worse, Mace is then informed that although he can't be paid in cash it's perfectly fine to offer him goods in trade - guns and ammo in this case. Any future society in which criminals cannot be paid in cash but can be armed is in serious need of a rethink.

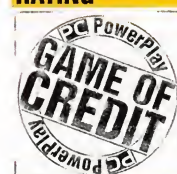
hunter's office in the sky. You'll probably die quite often either through weight of fire or through the numerous fatal terrain features that seem to dot the landscape. Either way, when you shuffle off the mortal coil it's back to square one to do the entire level over again, and again, and again... Most levels have a checkpoint about half way through but it comes as too little too late. If there's a game begging for a quick save option, this is it.

The graphics of Mace Griffin follow suit with the rest of the game - a mix of great ideas and terrible follow-up. With the resolution bumped up and all of the detail settings up high, Mace looks quite good indeed - just don't look too close or you'll be disappointed. Character animations are excellent, showing some real differentiation between the various races, giving each a very individual feel. The wound and death animations are well done as well but show one of the biggest bugs in the game - some of the enemies become invulnerable to damage whilst writhing in pain. You read that right - the wound animation renders many of the enemies immune to harm for a short period of time. Although not nearly as game killing as the invulnerable enemies, Mace Griffin also showcases a number of broken textures and graphical glitches.

At its core, Mace Griffin really has all the hallmarks of an excellent game - great ideas, some nice level design and nice animations. Ultimately it looks like the project took a wrong turn somewhere along the way and never found the path again, instead filling the gaps with incompetent AI, glitchy textures and animations and some bizarre missions and repetitive space combat.

Daniel Wilks

## RATING



### FOR

Great animations  
Good soundtrack  
Some inspired levels

### AGAINST

Dull space combat  
Stupid AI  
Graphical glitches

### OVERALL

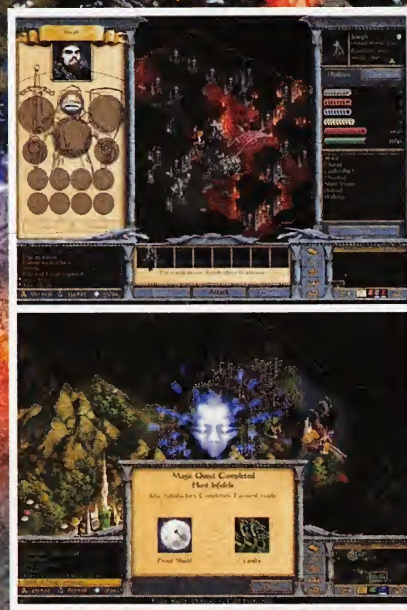
If you're hard up for some action you could do worse

60



# Age of Wonders Shadow Magic

Restore all that was good in Evermore



Developer: Triumph Studios Publisher: Gathering Distributor: Take Two Price: \$89.95 Rating: M15+ Available: Now

## SYSTEM

### NEED

P500  
128MB RAM  
16MB videocard  
900MB HDD space

### WANT

P800+  
256MB RAM  
32MB videocard

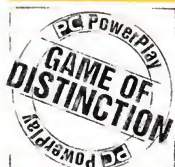
### MULTIPLAYER

Yes

### ONLINE

[www.sonyclassics.com/shadowmagic/](http://www.sonyclassics.com/shadowmagic/)  
Check out the moving tale of the first westerns to show movies across a xenophobic orient in Shadow Magic, the motion picture.

## RATING



### OVERALL

You wanted more, there is more, and it's good.

# 82



**S**hadow Magic is manifested several years after the events of Age of Wonders 2: The Wizard's Throne and the old neighbourhood is going to hell in a demon's handbag. Wizards have been outlawed by a charismatic zealot who has risen to be Emperor, and a gate has been opened which really would have been better left shut.

Now it's up to players to restore faith in wizards and spearhead a desperate fight against the Shadow Demons who are coming to devour, destroy and desecrate.

Whether you are an old fan or are just looking for some more turn-by-turn strategy goodness, Shadow Magic conjures up the goods.

There are more units, special abilities, skills, heroes and spells than you can safely point a wand at, and they can be combined in a dizzying array of combination. In certain scenarios you'll be able to build three or more race's units which blows things out further.

As you start to dig deeper you notice how the array of simple cogs mesh into complex



strategies. You can do things like launch diversionary attacks to get the enemy to waste their turn's casting points. You can lay siege, drop your spell load and retreat.

When it comes to actual combat you'll find how important it is to control the enemy's super lethal units with special abilities such as "Paralyse" and "Trap" so you can manoeuvre the right units into place to do maximum damage. You'll also find that since the first five attacks you launch at an enemy per turn are met with counter attacks, you have to make sure you send in the right units at the right time. Do you start with cannon fodder to protect your elite troops, or do you risk expensive heavily armoured troops to make that vital first charge?

You'll start to pick this up pretty quickly, because even the Easy campaign missions are quite a challenge the first time around. Don't expect to race through the 16-mission campaign, either. Each scenario takes hours to complete and some will keep you going all night, and that's not including restarts. This isn't because the action is slow; it's the

## POPULATING THE SHADOWS

You'll find all of the stereotype fantasy fare here, from Dragons to Halflings and Frost Witches. The 15 races are all pretty cool, even the Halflings get gun-toting Sheriffs, Centaurs and Eagle riders, and special abilities like the Elves being able to conceal their cities or the Orcs being able to make all of their units Vampiric add new spikes to your strategy. Three new races have been added to the series: The Shadow Demons (think Giger's Aliens) the Syrons (think Brom's leather-clad albinos) and Nomads who can pack up whole cities to take on the run (think Sinbad and 1001 Arabian Nights).

carefully laid-out RPG-style objectives, solid opposition and the fact that each scenario can twist between Surface, Underground and Shadow Realm maps.

With the 19 one-off maps, a random scenario generator, multiplayer options and editing tools, this game has plenty stuffed up its sleeves.

The quality almost matches the quantity and Shadow Magic has a strong AI (only let down by the fact it seems to get bored if you let the scenario drag on too long), good mission design and beautiful game balance.

The little animated touches also shine. You see heroes throw aside their tiny cloaks before counter attacking and troops cursed with Pestilence trail clouds of murky green gas as they move.

Overall, Shadow Magic is a great game, if a tad familiar - the Master of Magic influence seems to be growing - but, not only will it keep you going back for just one more turn, it'll make you wish you remembered to save more often.

Timothy C. Best



The main illustration features a man with glasses and a white t-shirt holding a handgun, and a woman in a red dress holding handcuffs. They are standing in front of a city skyline at night, with a body of water in the foreground.

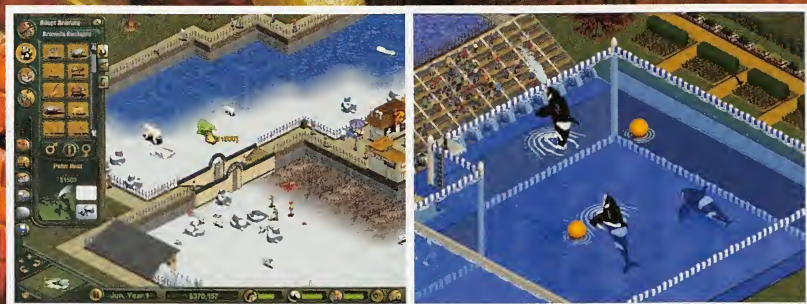
# Runaway

## A ROAD ADVENTURE

If you like to step out of reality and lose yourself in the unique atmosphere of a really good adventure game then you'll love Runaway. Its fascinating storyline spiced with superb graphics and just the right touches of humour serves up a recipe for enjoyment that will keep you enthralled for hours. Join Runaway's endearing characters as the plot twists and turns and you puzzle your way through the game's many fascinating enigmas. As you enjoy the ever changing scenarios you'll soon see why Runaway has been a huge hit in Europe, acclaimed by both Press and players alike.







# Zoo Tycoon Complete Collection

It's a jungle out there

Developer: Microsoft Publisher: Microsoft Distributor: Microsoft Price: \$89.95 ■ Rating: G8+ ■ Available: Now

## SYSTEM

### NEED

233MHz CPU  
128MB RAM  
4MB 2D videocard  
1.3GB HDD

### WANT

300MHz CPU  
256MB RAM  
32 MB videocard

### MULTIPLAYER

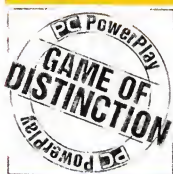
No

### ONLINE

[zoo.nsw.gov.au](http://zoo.nsw.gov.au)

"In the end, we will conserve only what we love, We will love only what we understand, And we will understand only what we are taught." Or, "Monkeys rock."

## RATING



### OVERALL

Totters between value and overkill, but nonetheless has excellent replayability.

# 83

**A**fter devoting the last week of my life to building my skills as the world's greatest Zoo Tycoon, I am still perplexed and without explanation as to why this game is so addictive. There is the love of cute fluffy animals and the not so winsome, and the inevitable flashback to the use of building blocks, but as a strategy game you really aren't overloaded with a great deal of strategy. In fact, pre-thought was somewhat of an afterthought when setting out to create my first menagerie. It's just that wacky fence design and out of this world tree placement doesn't seem to require elaborate and systematic planning. No, it's just fun!

Zoo Tycoon consists of two formats: freeform and scenario-based gameplay. The freeform mode is Sim-ish with a simple learning curve and is accessible to all ages. Sounds corny, doesn't it! Something that will make some people cringe is the educational value. Animals from around the world with environmental requirements, such as ground cover, maintenance and toys, need the right elements to be brought together to ensure you don't end up with a furious or dead snow leopard. The result being that you learn more about the animals; where they are located around the world and what habitats they thrive in. Unlike The Sims, an additional scenario format provides a feeling of completion, and to some extent success as objectives and a time limit are set with requirements determined by basic game levels of beginner, intermediate and advanced.

Replay value is endless - as big as the maps! - and the complete collection contains not only the original Zoo Tycoon game and both expansion packs (Dinosaur digs/Marine Mania), but an all-new Endangered Species theme pack. Although addiction was fast, the overload limit came at breakneck speed.

Building is the highlight and once

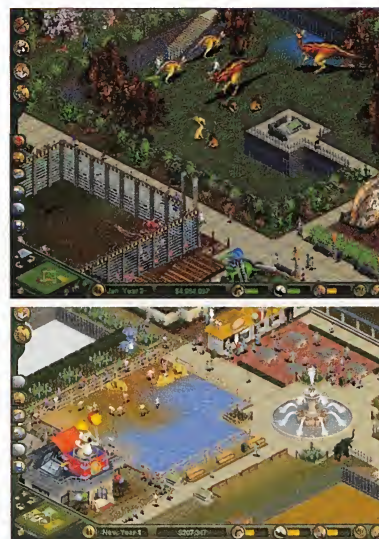
you've filled your zoo with happy animals, the only new thrill is pleasing the people and, as with life, this is never possible. It doesn't help that the people visiting your zoo are scum-sucking-dirtbags. Weren't they ever told to go before they leave the house! Who were these people modelled on? The guys from Jackass? One guy was complaining that he was hungry while standing next to a food machine! I mean, come on. To eliminate this problem you can pick people up and move them to different locations within your zoo, but I've found it best to move them outside the front gate. That way, they can either pay to get back in or you're left with a happier zoo all round. There are some nice touches, such as Santa flying overhead at Christmas and a witch for all the Goths at Halloween!

Not once while playing as the master of the zoo universe did I come across technical difficulties.

The zoom is limiting, but does not affect game play, and even though the game is very detailed with each animal and human able to be isolated, the only glitch occurred in the tutorial for Marine Mania. Being a zoo perfectionist, the undo button was restrictive but acceptable. Not one thing distracted me from playing the game.

Towards the end of my Zoo experience thoughts turned to the ability for chaos and I began to test my theories. When the lions got hungry I fed them a monkey or two, expensive but amusing. I tested the sound by releasing the big cats from their cages, blocking the entrance, and listening to the screams of all the unimpressed patrons as the felines gobbled them up - the sound was fantastic. While not a game I will go back to week after week, I will most definitely return every six months or if there was a rained out excursion to the zoo.

Vanessa Morgan



## RUNAWAY MONKEY FINDS LUXURIOUS NEW HOME

A runaway monkey fled from a Serbian zoo last week to find shelter in the attic of a luxurious house.

Two Japanese makaki monkeys escaped during feeding in Subotica, 220 kilometres north of Belgrade.

One of them has since returned, and the other is destined to live life in an attic as zoo officials refuse to hunt it.

"I called the zoo, but they said we should catch the monkey as it was too young to be shot with a tranquilliser because it could die," said Zorica Juhas, the monkey's new neighbour.

"The monkey eats whatever we have in our yards, plums, nuts... Sometimes he wanders around, but he hides from cats and dogs".



# Get with it Hutch - shoot!



## Starsky & Hutch

This review bought to you by the son of the man who played Huggy Bear

Developer: MEP Publisher: Empire Interactive Distributor: Vivendi Universal Price: \$89.95 Rating: M15+ Available: Now

It looks a though it's not only Hollywood who are plumbing the past for new ideas. In the last 12 or so months we have seen both the Dukes of Hazard and Knight Rider (dis)grace our screens. Now MEP have delved back another decade for inspiration, translating the classic 70's cop/action show, Starsky & Hutch into a game. Whilst there's nothing wrong with using historically popular shows as inspiration for games, using a show that the majority of the target audience may not have seen let alone heard of is a somewhat questionable decision. Luckily the developers have made some interesting decisions with the title, changing what could have been a terrible cash-in to a flawed but still playable

racing game.

Players take the role of street-smart cops Starsky & Hutch but the real star of the game is the Ford Gran Torino they drive. Through a number of missions, Starsky & Hutch sees players driving the vintage muscle car around the city, crashing into and shooting criminal vehicles until they're forced off the road, all the time trying to make the action as spectacular as possible to keep the ratings high and the show on the air. This is by far the most interesting element of the game. Throughout the city are a number of jumps, corners perfect for power-slides and piles of boxes to crash through, each of which can vastly increase the ratings if pulled off properly. Aside from having to fight against the time limit to bring the level's criminal to justice, players must ensure that the ratings remain high enough so that the show isn't prematurely cancelled. The TV style format carries on throughout the entire game with players making their way through various episodes rather than standard levels.

Although the idea behind the game is quite inspired, unfortunately the follow through leaves a little something to be desired. The idea of having each level of the game being an episode of the show

is an excellent idea but if any show had a plot as singularly repetitive as the game it wouldn't last a season let alone the four seasons the show ran. The first time you play an episode it's a huge amount of fun, hooning around the city, shooting out the windows in an effort to take out the bad guys but once you've played through umpteen levels with exactly the same format the whole thing begins to tire rather quickly.

Starsky & Hutch is a good looking game for the most part with a large, constantly moving city reminiscent of a sharper and more colourful version of GTA 3. Cars look great and the cinematic camera angles used during stunts add a real flair to the proceedings. Whilst the game looks great during the actual levels it takes an abrupt and terrible about face during the cutscenes, opting for a flat, barely animated look that we're sure the developers thought looked funky but instead comes across as looking like a cheap, web-based flash animation.

Daniel Wilks

### HUGGY BEAR



Although it's hard to really recommend Starsky & Hutch to the majority of gamers, there is still one good reason for everyone to rush out and buy the title - Antonio

Fargas, the man who played streetwise snitch, Huggy Bear. Aside from playing Huggy, Fargas would have to be one of the most famous unknown faces of 70's film, the perennial, "that guy", having been featured in around 65 movies and around 30 TV shows. It's great to see a veteran character actor like Fargas getting paid and with any luck we could see his compellingly ugly visage on TV again some time soon.



### SYSTEM

#### NEED

PII 450  
16Mb 3D video card  
128Mb RAM  
700Mb HDD

#### WANT

P4 1.5 GHz  
32Mb 3D video card  
256Mb RAM  
700Mb HDD

#### MULTIPLAYER

No

#### ONLINE

[antoniofargas.net](http://antoniofargas.net)  
Everything you could possibly want to know about the man who played Huggy Bear. If you happened to be so inclined... not that there's anything wrong with that!

### RATING



#### OVERALL

Great idea flawed by an aged license and a repetitive structure

# 65





# Ford Racing 2

Yes I have driven a Ford lately, thanks

Developer: Razorworks Publisher: Empire Distributor: GameNation Price: \$79.95 Rating: G8+ Available: Now

## SYSTEM

### NEED

P3-667  
64MB RAM  
32MB Videocard  
750MB HDD

### WANT

P4-1GHz+  
256MB RAM  
GeForce3

### MULTIPLAYER

Nope

### ONLINE

[www.hempcar.org](http://www.hempcar.org)  
Not only does this site explain how Henry Ford was an anti-Semitic Nazi sympathiser, it also advocates building cars out of marijuana. No, really.

## RATING



### OVERALL

Too much Ford, not enough racing

# 56

**S**o here we are again, another racing game using licensed vehicles all from the one manufacturer. With a sniff, I remember the halcyon days of Porsche Unleashed, or - as the yanks would have it - Need For Speed Porsche 2000.

Ford Racing 2 is the sequel to the smash-hit Ford Racing. Smash hit in the sense that even I, who have at least sniffed the plastic shrink wrap of every PC game released in this country since 2001, have never heard of it. Perhaps it was a console only release? Perhaps no one cares.

Ford Racing 2 is simple to explain. Twenty or so Ford-based cars from various eras are slowly unlocked as you win races against other Ford-based cars from various eras. The cars are grouped into themed sets and include Classics, Movie Stars, Offroad, Stock Cars, et Ford-flavoured cetera. Each set of cars has its own set of two or three tracks, but this means there are only about 15 tracks

in total in the entire game.

NFS: Porsche Unleashed 2000 (or whatever the hell it was officially called) took the curse off the Porsche-only gameplay by having lovingly detailed tracks and a swanky museum-style interface that included groovy looping black and white footage of Her Porsche inventing expensive cars. Ford Racing 2 has an interface that can be described with one word, and that word is homely-as-a-mule's-butt. Garish lettering, blistering fluoro colours and a lack of anything distinctly Ford.

This is the thing with this game - it targets Ford nuts, so you think the developers would want to beef up the Ford flavour as much as possible. Not so here, it's a generic late 90s racing game with typical modes and challenges - knock out, checkpoint, one-on-one et al - that does little to evoke the mystique, the tradition, or even the anti-Semitic roots of one of the world's mightiest driving marques.

Add to this the graphics which... well let me put it this way. My 21-inch monitor usually turns average games into awesome games. A bigger screen improved the graphics, right? Not so with Ford Racing 2. Sure, the style is clean, but the textures lack more than a certain something and the poly count on the landscape is distressingly low. Someone should tell Razorworks that

you don't have to build rolling hills out of big triangles anymore.

There's also very little sensation of speed, and no real incentive to win races since all the cars are really boring when compared to the machines available in Midnight Club II or even the afore-mentioned Porsche game.

As a final nail, this game also has the worst 80s speed metal hair band soundtrack in the history of history itself. The music in Ford Racing 2 transcends badness and enters a new realm where human ears exist solely as the playthings of tiny metal demons with tinier pitchforks. There are lyrics, but I choose to spare you from their full horror.

"You'd be popular too if you were selling x!" proclaim the current crop of Ford ads. Not if x in this case equals Ford Racing 2 you won't be. Still, at least it works, right?

Anthony Fordham





# Tony Hawk's Pro Skater 4

Indy 900 anyone?

Developer: Neversoft Publisher: Aspyr Distributor: Activision Price: \$89.95 Rating: M15+ Available: Now

**A**fter making it to all consoles last year, Tony Hawk 4 finally crawls its way onto the humble PC - and it's about time too, as the PC hasn't had a good action/sports game since...Tony Hawk Pro Skater 3. In case you've never played a Tony game before the basic premise is simple - choose a skater, skate around the various levels earning more stat points, money and trick slots by achieving objectives (such as getting a high score or pulling off the right tricks as they're called out), which can be used to become a better skater and unlock new levels so you can do it all again. Complete the game as one of the predefined pro-skaters and you'll unlock a video showing the star doing things no mere mortal should be capable of doing. To put it bluntly, Tony Hawk's Pro Skater 4 is about the most perfect console port ever to grace the PC, taking advantage of the PC's more advanced video hardware whilst retaining the feel of the console classic.

As a nice departure from the previous games in the series, Tony 4 does away with the standard two minute run approach, instead opting to allow players to skate around the huge levels to their heart's content, exploring for money and unlockable areas as well as NPC

characters who dish out objectives. The objectives are nicely varied between levels but the old pickup C-O-M-B-O in one combo and find the S-K-A-T-E letters are still omnipresent, not that that's a bad thing. Another new approach to the series comes in the form of flatland tricks and double-button presses. When manuals were introduced in Tony Hawk 2 they really added a whole new dimension to the game as longer trick runs could be linked together. Tony Hawk 3 features a number of special trick manuals but Pro Skater 4 takes it one step further by allowing players to pull off special flatland combos by first going into a manual and then experimenting with different button combinations. Likewise players can now pull off tweaked air tricks with double button presses. Whereas in Tony 3 the

## KEYBOARD OR GAMEPAD

Although Tony Hawk's Pro Skater 4 does allow for keyboard control, unless you're a strange ambidextrous tentacled creature (or John Dewhurst) you should really opt for a gamepad to play. Although the keyboard is functional, the game is simply too action packed for it to be a really optimal choice.

Sack-Tap was a special trick, players can go from a Benihara to a Sack-Tap simply by quickly double tapping the grab button. Without a doubt the ability to pull off more intricate trick combos and string them together with flatland tricks really breathes some fresh new life into the Tony Hawk franchise.

Tony 4 looks and sounds fantastic. To take advantage of the advanced system specs of most PCs there are a range of resolution and texture options, as well as the option to have anti-aliasing as standard. If your PC isn't exactly cutting edge but you still want to bump up the graphics, the PC port has an optional distance fogging, allowing players to run the game at high framerates even on an older system. Unfortunately the distance makes a few of the objectives difficult - finding the S-K-A-T-E letters is hard when you can't see more than about 10 metres in any given direction. The animations are superbly motion captured and the tricks look great. Voice acting ranges from great to simply OK, but that has more to do with the personalities of the real life pro-skaters than the quality of the recording. Tony 4 also allows for online multiplayer but beware - if you don't have an excellent ping, don't bother.

Daniel Wilks

## UNLOCK THIS

Aside from unlocking other levels and vids, accumulated cash can be spend purchasing special skaters. For \$9000 each, players can purchase Eddie (the Megadeth zombie) or Janco Fett or for \$100000 they can buy Daisy, a pneumatic, hot-panted female skater voiced by pornstar, Jenna Jameson.



## SYSTEM

### NEED

PIII 800MHz  
256Mb RAM  
32Mb 3D video card  
700Mb HDD

### WANT

P4 2GHz  
512Mb RAM  
64Mb 3D video card  
700Mb HDD

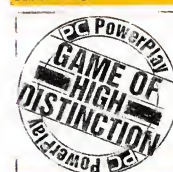
### MULTIPLAYER

Yes

### ONLINE

[jumpingmonkey.com](http://jumpingmonkey.com)  
Self indulgent crap sprouted by middle-class idiot who posts bandwidth draining, stomach churning photos of his female offspring drooling a lot. Why? Because it's there.

## RATING



### OVERALL

A perfect console port and a great extension to the Tony Hawk franchise

90



# TECH IN REVIEW

**S**o I'm sitting here in my luxury serviced apartment, two days into the fest of crazy dancers, grandiose booths and gimmicky giveaways that is Computex 2003, trying to figure out what to write for my tech intro and reminding myself of how much I love my job.

Should I rave on about how every man and his dog is now supporting overclocking, and that I haven't yet been to a single product demonstration that hasn't had at least one Windows based overclocking application thrown in? Too bad that every one of these I've tested in the past has been a great way to turn your PC into an unbootable mess, requiring the clearing of the CMOS to get back into Windows again.

Or maybe you guys want to hear about how bloody popular Wireless Networking is - as NVIDIA said during their keynote speech today, if a semiconductor company doesn't turn itself into a networking company, it's going to be a dead company. Pity these companies weren't around when I did the Wireless LAN PowerTest last month - they honestly expect us to wait three or four hours as we wirelessly copy a DVD over to our Media box from our file server? 54Mbps, my ass - real world results show speeds over six times slower than what the manufacturer's would have us believe.

Or maybe I could go on about the fact that things in videocard land seem rather stagnant, while the opposite could be said of our CPUs. Just as AMD releases the uber fast FX-51, Intel blindsided us with the introduction of the "Extreme Edition" Pentium 4, whose 2MB of cache promises to leave the FX-51 whimpering in the gutters alongside

our wallets. It's actually a Xeon server CPU in disguise, and we should have some benchmark results next month - provided Intel come to the party and give us a review sample.

Nah, I think I'll just talk about crazy dancers instead. You can't seem to pass a booth without being blinded by Taiwanese dancers dressed up to the nines in spandex and glitter, with the extra talented performers throwing in some bad Karaoke singing amongst their giddy gyrations. It's a uniquely Taiwanese cultural phenomenon, one that us Aussies would do well to ignore, and I seem to be the only one amongst the audience who finds it

totally hilarious. As a result, I've had more than my fair share of dagger looks from older oriental gentlemen, who seem to think that watching a 17 year old girl prancing around in two square centimetres of stretch fabric is an affair that is to be taken most seriously. I can't really complain though, because if it wasn't for many of these crazy Taiwanese, I wouldn't have all the cool hardware that's now available to play games on...

**Bennett Ring**  
Deputy Editor,  
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## 87 Powertest 19" CRT Monitors



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### HOW WE TESTED

For an in-depth explanation of how we test video cards, CPUs, and motherboards head to our PowerTools section on page 104. You'll also see a list of hardware that makes up the PCPP testbenches, which are used for the testing of the majority of our hardware.

Where possible we use benchmarks based on real world games to test hardware performance; this way we know for sure which component will give you the best gaming experience. We don't love hardware for hardware's sake - it's all about using this hardware to make your

entertainment even more, well, entertaining. We also try to compare the review product with the current "best of class" piece of hardware, so at the end of the day you'll know exactly which product offers you the best bang for buck.

For a product to earn a Power Award, price be damned, we're just looking at how this product performs. If there's nothing better, that we've seen at least, it'll get the Power Award. However, if a product offers a great level of performance or features for a very reasonable price, it'll get the Value Award. Simple, really.







# BIG MUTHA MONITORS

For all those gamers who likes them big, bold and butch, **Bennett Ring** takes a few 19" CRT monitors for a burn

**A** couple of issues back we checked out the latest and greatest in TFT (Thin Film Transistor) monitors, and after testing these 16ms pixel response time beasts realised that the humble CRT (Cathode Ray Tube) monitor still isn't quite dead yet. While the latest generation of TFTs have pretty much cleared up the Beerovision effect that older TFTs suffered from

(otherwise known as the motion blur encountered with rapidly moving images), they're still not quite as sharp as CRTs, and as a result many gamers still aren't ready to make the switch to these Lara Flynn Boyles of the monitor world. Try telling that to manufacturers though - as far as they're concerned the CRT monitor is a dead horse that's not worth

flogging any more.

In fact, many monitor manufacturers are winding up production of CRTs, instead switching their entire product line to TFT. This is bad news for those of us who still prefer CRTs over TFTs.

CRT monitors are as old as the hills, so prices have plummeted immensely over the last few years. A 19 inch CRT monitor will now

only set you back around \$500, and gives you plenty of screen size, making this size the sweet spot for gamers who don't want to spend too much. Given the rapidly declining range of 19" CRT monitors available to Joe Public, we thought we'd round up what could turn out to be one of the last generations of these monitors.

A CRT is a very different beast to



a TFT monitor, and you need to look for different qualities when searching for a decent CRT. Firstly, dot pitch, or the distance between the individual phosphor dots, is very important. The lower this is, the less likely you are to notice individual pixels. Most of today's 19" CRT monitors have a dot pitch of 0.25mm, as you'll see from our specifications table. You might not think there would be much of a difference between a 0.25mm and a 0.24mm dot pitch, but after checking out the beautiful Sony monitor it has to be said that there is indeed a big difference between the two.

Unlike TFTs, CRTs aren't limited to a native resolution, so it's important to check out what the maximum resolution of the monitor is. While 1600x1200 is more than enough for today's videocards, higher resolutions are desirable to future proof your purchase. The refresh rate is also one of the most important specifications to look for as well. This is the rate that the screen is drawn by the electron gun within the tube, and anything less than 75 times per second (75Hz) will lead to nausea, headaches and in a worst case scenario, exploding eye balls. As you increase

resolution, refresh rates drop, so only go for a monitor that has a decent refresh rate (75Hz or better) at the higher resolutions. Thankfully, most new 19" monitors handle this easily. On a related note, check out our RefreshLock boxout for a common PC gaming problem regarding refresh rates, and the simplest solution for it.

CRTs are big mummies, which is one of the main reasons many are making the switch to TFTs, but it is possible to get a CRT that is smaller than the rest. Check out the size of the CRT before purchase, just to make sure it'll fit in your gaming nook without the need for major building renovations.

CRTs and TFTs do have one thing in common - many CRTs from different manufacturers seem to use the exact same picture tube as their rivals. This was very apparent during our image quality testing, as there was hardly any

difference between many of the competing models. Which leaves you with one major factor when deciding on which monitor will be squarifying your eyes over the next few years - price. As you'll see from this PowerTest, if you don't look around you could pay up to twice as much as a comparable monitor. Luckily, you've got this PowerTest to point you in the right direction.

### My eyes hurt

We hooked these monitors up to our standard test bench videocards, the Sapphire RADEON 9700 PRO, and installed the Catalyst 3.6 drivers and DirectX9.0b, and ran them at 1280x1024. After calibrating the monitors using DisplayMate's comprehensive calibration mode, we used the DisplayMate CRT script to

test the image quality of each monitor. This is comprised of 45 different subjective image tests, ranging from screen geometry, to grey scale tests, to moire screens (moire

is the waviness seen on screens when cross hatch patterns are almost parallel to the monitor's scan lines). To make these tests slightly less subjective, we ran each monitor test side by side with the Sony G520 monitor, which is widely regarded as one of the finest CRT monitors money can buy. Surprisingly enough, many of the monitors were very closely positioned when it came to image quality - no doubt because they're based on the same components.

### Get 'em while you can

Your monitor is unlike every other component in your PC; buy a good one and chances are you'll still be using it in five years. Provided you don't hurl your keyboard through it after an exceedingly bad thrashing in WarCraft 3 online, that is. And due to the maturity of the technology on offer, most of those in our PowerTest were of an exceptional quality. In fact, it's probably one of the closest PowerTests we've ever run, which made it very difficult to doish out the awards. Let's take a look at which 19" CRT you'll be irradiating your eyeballs with for the next few years...



## Monitor Specifications Sheet

	Viewable Image Area	Dot Pitch	Max. resolution & refresh rate	Dimensions (WHD)	Flat screen	Price
ACER AC901	18"	0.26mm	1600 x 1200 @85Hz	476.5x455x416	No	\$399
BenQ P992	18"	0.25mm	1600 x 1200 @78Hz	455x466x463	Yes	\$499
IBM Think Vision C190	18"	0.25mm	1600 x 1200 @75Hz	468x456x458	Yes	\$429
LG Flatron ez T910B	18"	0.25mm	2048 x 1536 @61Hz	N/A	Yes	\$499
Mag 986FS	18"	0.25mm	1600 x 1200 @75Hz	465x470x477	Yes	\$374
Philips 109B4	18"	0.25mm	1920 x 1400 @75Hz	440x447x449	Yes	\$519
ViewSonic P95f+	18"	0.25mm	2048 x 1536 @68Hz	480x456x470	Yes	\$899
Mitsubishi 1998FD	18"	0.25mm	1600 x 1200 @75Hz	455x476x463	Yes	\$699
Sony Multiscan G520	19.8"	0.24mm	2048 x 1536 @60Hz	497x501x485	Yes	\$2,099



# Acer AC901

• Price: \$399 • Distributor: Acer • URL: [www.acer.com.au](http://www.acer.com.au)

The only non-flat screen monitor in the entire roundup, the AC901 made us realise why flat screen CRTs are so damn good. Due to the bulbous nature of this monitor, the image geometry results for this monitor are easily the worst of the lot. Okay, it's not actually that bulbous, but the slight curvature means that straight lines, especially towards the edges of the screen, end up coming out slightly warped. This can be especially notable in games. It also has major issues with the grey scale test, making it very hard to tell the difference between shades of grey that were close together. This is a surprising result, as it does quite well in all of the other colour and grey scale tests.

The dot pitch is also the worst of the lot, at 0.26mm, giving this monitor a grainier, more pixelated look than the competition. One of its main redeeming features is the

ability to run at 1600x1200 with an 85Hz refresh rate. However, 1600x1200 is the maximum resolution this monitor is rated for, so it's not going to last as long before you need to upgrade as many of the other monitors.

The OSD (On Screen Display) is also a little disappointing, with all controls lumped under one section, making navigation a little clumsier than the other monitors. The bezel around the picture tube is nice and thin, so at least this monitor won't take up quite as much desk space as some of the other monitors. It's also got a relatively thin case which tapers inwards the deeper the monitor goes, so it might be a nice contender for those with very limited space.

While it's quite cheap, we simply can't recommend this monitor. It's not excruciatingly bad, it's just that there are so many other monitors in the same price range that do a much better job.



## PCPP Score

Image Quality: 3/5 Overall: 3/5

# BenQ P992

• Price: \$499 • Distributor: BenQ • URL: [www.benq.com.au](http://www.benq.com.au)

The BenQ is one of the monitors in the PowerTest that we believe might use the same components as a few of the other monitors, based on the image quality test results, OSD and look of the monitor.

It did very well in the image quality tests, and had near perfect image geometry due to its flat screen. Like many of the monitors, its poorest result was in the grey scale compression test, with shades of grey that were close together merging into one. Unlike many of the flat screen monitors, moire problems were practically non-existent.

The use of a 0.25mm dot pitch made it difficult to perceive individual pixels, but it's refresh rate was a little lacking. At its maximum rated resolution of 1600x1200 you'll be stuck with a refresh rate of 78Hz. This mightn't be too bad, but where possible we prefer to keep 85Hz as the minimum to ensure comfortable use over long periods of time.

The OSD on this monitor is simple

to use, with a fairly standard layout. Unfortunately, it's not the prettiest of monitors, looking very beige and blocky. The rear of the monitor is also relatively wide, so make sure you'll be able to fit it into your gaming area before laying out your dosh.

This monitor does an admirable job for the asking price of \$499.

## WHY DO I FEEL SICK?

One of the most common problems when gaming with Windows XP is the refresh rate bug. As soon as you boot up a Direct3D or OpenGL game your monitor is probably running at a woeful 60Hz, which will make you blow chunks in no time. But there is a solution!

In fact, there are many solutions, but the easiest to use is RefreshLock, a free application that locks the refresh rate.

Head over to [www.pagehosting.co.uk/rl](http://www.pagehosting.co.uk/rl) to download this eyeball saver of an application.



## PCPP Score

Image Quality: 4/5 Overall: 3.5/5



## IBM ThinkVision C190

• Price: \$429 • Distributor: IBM • URL: [www.ibm.com.au](http://www.ibm.com.au)

When we think of IBM products, a huge dollar sign usually pops up over our heads, indicating that we associate uber high prices with its gear. You can imagine our surprise then when we saw that this was one of the cheapest monitors in the roundup. And as you'd expect from an IBM product, low quality simply isn't an issue.

This is one of the few black monitors in the PowerTest. Monitor manufacturers take note of the evolution of PC cases - we like black much more than creamy, icky, beige colours. This makes it one of the more attractive monitors on offer, but it has to be said that the monitor casing is rather large, especially towards the rear.

It is also one of the few monitors that doesn't require a load of tweaking to get the contrast and brightness levels correct. In fact, it didn't require

any tweaking at all; simply set it to the factory default and you're good to go. Nice. The OSD is fairly simple to use, but not quite as intuitive as some of the better OSDs we'd seen.

Nearly all of the image quality test results are exceptional, except for (you guessed it) grey scale compression. Join the crew. It also has slight issues with Moire in the corners of the screen, but everything else looks great. While it's a flat screen, this monitor is one of those that still had a slight amount of bulge, but it's not a big deal.

Using a 0.25mm dot pitch means that the pixels are very hard to detect, but its maximum refresh rate and resolution left a little to be desired. The maximum rated resolution is 1600x1200, running at a refresh rate of only 75Hz, one of the lower of those in the PowerTest. But other than this small complaint, we have no hesitation in recommending this excellent monitor.



### PCPP Score

Image Quality: 4/5 Overall: 4/5

## LG Flatron ez T910B

• Price: \$499 • Distributor: LG • URL: [www.lge.com.au](http://www.lge.com.au)

Damn, it's hard to do a monitor PowerTest when there are so many fine monitors on offer. The LG T910B is yet another example of an excellent flat screen monitor that sells for a very reasonable price. For the love of god, why can't we have a bit of variance in the quality of these different monitors, allowing us to write a bunch of witty and humorous remarks about each?

This monitor is one of the most attractive in the PowerTest due to the use of a two tone grey encasing - it even looks better than the all black monitors. It's fairly wide towards the rear, so once again it's time to whip out the tape measure before whipping out your wallet. The OSD was one of the best on offer, being very clear and easy to navigate.

The image quality test results were superb, with the exception of the grey scale compression test, so you're bound to be very pleased

with the image offered. It exhibits a little bit of Moire in one corner, but this certainly isn't a showstopper of a problem.

Especially impressive are its results in the screen bleeding, halo, focusing and streaking tests, scoring a perfect 10 out of 10 in each.

Just like nearly every other monitor in the PowerTest, the T910B uses a 0.25mm dot pitch, so you won't have to stare at obvious pixels all day long. The maximum resolution of this monitor was most impressive. While many of the others are happy to stick to a maximum of 1600x1200, the T910B ups the ante by supplying a ridiculously high resolution of 2048x1536, although it's only capable of a painful 61Hz refresh rate at this setting. Now we just need a video card that is capable of running our games smoothly at such high resolutions.

In all, an excellent monitor that demands your attention. Got a spare \$500 and a crappy 15" monitor? Then you need this beastie.



### PCPP Score

Image Quality: 4/5 Overall: 4/5



# Philips 109B4

• Price: \$519 • Distributor: Philips • URL: [www.philips.com.au](http://www.philips.com.au)

**W**e had high expectations of this monitor, as the 109 series from Philips has established itself as an excellent range of monitors for gamers. However, it appears that the competition has caught up to the lead that Philips set, and in many ways, even surpasses it.

While it has some of the best geometry results, several of the image quality tests highlight a couple of issues with this monitor. It suffers fairly badly from Moire problems, more so than almost every other monitor in the PowerTest. Due to these issues, its corner resolution tests also suffered. It is also one of the monitors that exhibited flickering in the bottom left corner, no doubt due to all of the electromagnetic emissions being pumped out of the open test bench sitting next to it. And yet the cheaper MAG monitor didn't suffer from this at all. However, unless you run your PC outside of its case, chances are you won't see this problem replicated at home. A

maximum resolution of 1920x1440 at 60Hz goes some one way to making up for these problems.

This is one of the few monitors that has special enhanced brightening features. In this case it's called LightFrame 3, but we found it unusable for our image quality tests. As soon as it is activated text becomes very blurred, and the image quality test results show lots of streaking and halos. As a result we had to leave this disabled for the tests.

A feature that Philips is rather happy about is the fact that this is apparently the world's most shallow 19" CRT monitor. And we don't mean that it will only hang out with cool people - it's actually physically not as deep as all of the other monitors in the PowerTest. However, it's only shorter by a couple of centimetres, but the rear is very tapered, making this one of the smallest 19" CRTs we've seen.

The 109B4 isn't the worst monitor we've ever used, but due to the high quality competition it's up against, comes off as a little average.



## PCPP Score

**Image Quality: 3.5/5 Overall: 3.5/5**

# MAG Innovision 986FS

• Price: \$374 • Distributor: AusPC Market • URL: [www.auspcmarket.com.au](http://www.auspcmarket.com.au)



**T**he MAG has a special brightness mode that offers a picture that is around 30% brighter than the standard mode. This is intended for use during games and DVDs, but we've got to say it's not all it's cracked up to be. When activated we found that it tended to wash out the colours, and led to blurring of the fonts.

One of the cooler features of this monitor is the little dial on the front, which makes navigating the OSD a total cinch. As the cheapest monitor in the PowerTest, we weren't expecting great things out of this flat screen monitor's image quality. So we were pleasantly surprised when it did remarkably well.

Thanks to the flat screen, image geometry was near perfect, and it passed with flying colours through all of the colour saturation tests. It even had one of the best Moire test results, even when compared to monitors twice its price. The only area that had poor results were the

screen regulation test - when the screen flashed from black to white a very obvious changing of the screen size took place. However, this shouldn't prove to be a problem when gaming.

Many of the monitors in the roundup suffered from flickering in the bottom left corner due to their proximity to the open test bench motherboard, but amazingly this budget monitor had no flickering at all, suggesting it's better shielded than the rest. Thanks to a 0.25mm dot pitch, pixels were very hard to detect, but its maximum resolution of 1600x1200 at 75Hz is a little lacking. But hell, at this price, we're not complaining. Thankfully, you'll be able to up the refresh rate to 85Hz at a resolution of 1280x1024, which seems to be the favourite resolution of those with high end video cards.

Put simply, you won't find a better monitor at this price.



## PCPP Score

**Image Quality: 4/5 Overall: 4/5**



## ViewSonic P95f+

• Price: \$899 • Distributor: ViewSonic • URL: [www.viewsonic.com.au](http://www.viewsonic.com.au)

**W**owners, almost a grand for a 19" CRT monitor? That's almost twice as much as the majority of the monitors in this roundup, so it'd better be frickin' great for that much. Alas, no...

This monitor uses the same aperture grill Trinitron screen as the Sony monitors, so you'll notice a couple of very fine, black, horizontal lines running across the screen. However, these are so thin that you'll soon learn to ignore them.

Image quality results are a mixed bag. While the majority of these results were exceptional, there were a couple that let down the entire package. First off the bat are its grey scale compression results, which were relatively poor. But the worst problem was encountered during the Moire tests. In fact, this monitor probably displayed the worst Moire issues of all monitors in the PowerTest, even after we tried to use the monitor's Moire settings to remedy the problem. Now, this

wouldn't be such a concern if the monitor didn't cost so much. But the fact is that this is the most expensive 19" monitor in the PowerTest, so it shouldn't have any such issues.

It also exhibited a fair amount of flicker in the bottom left corner, when \$370 monitors didn't. This is another of those monitors with a special overbrightness control, and in this case it didn't screw with the image quality quite as badly as the Philips monitor. However, it still made text blurry enough for us to test the monitor with this setting disabled.

As you can see from the product photograph, the P95f+ is one of the few black monitors on offer, and its case is relatively small compared to the others. The OSD is simple to use thanks to an intuitive layout.

We still can't quite comprehend the high asking price of this monitor. And after testing several others at half the price, we find it impossible to justify this amount.

### PCPP Score

**Image Quality: 3.5/5 Overall: 3/5**



## Mitsubishi DiamondView 1998FD

• Price: \$699 • Distributor: Mitsubishi Electric • URL: [www.mitsubishi-electric.com.au](http://www.mitsubishi-electric.com.au)

**A**t \$700, this is the second most expensive monitor in the entire roundup. But unlike the most expensive 19 incher, this monitor performed admirably in all of our image quality tests. It was one of the few monitors that didn't struggle with the grey scale compression test, and even managed to score a perfect 10 out of 10 for the Moire tests. Our geometry tests picked up a little curvature of the screen, even though it's a flat screen, but this was true of many of the flat screens in the PowerTest.

The dot pitch of 0.25mm helps to hide the individual pixels, but the maximum resolution of only 1600x1200 at 75Hz is a little disappointing considering the high asking price. Thankfully it's happy to run at 1280x1024 at 85Hz, which is the setting most of you will use it at. And, like most of the monitors, this model exhibited a little flickering in the bottom left corner, suggesting it

could do with better shielding.

This was the third and final black monitor in the roundup, and its case tapers sharply towards the rear, making it one of the smaller monitors in the PowerTest. A special multimedia base is available at extra cost, but the piddly speakers in this won't do your games any justice.

While this monitor had the second best image quality out of the lot, it's a rather expensive unit, especially when you consider that you probably won't even notice the better image quality in day to day use.

### DISPLAYMATE

If you'd like to try the same tests we ran, head over to [www.displaymate.com](http://www.displaymate.com) and try out the CRT script in the Display Mate Multimedia edition. When it comes to calibrating and testing monitors, there's no rival to this application.

### PCPP Score

**Image Quality: 4.5/5 Overall: 4/5**





# Sony 21" G520



• Price: \$2,099 • Distributor: Sony • URL: [www.sony.com.au](http://www.sony.com.au)

When I finally die and go to heaven, I'll walk through the gates and ask where the nearest gaming LAN is situated. When I arrive at the designated geek zone, PCs with 100THz processors, RADEON 9 Billions and this monitor will await me. I kid you not - this is easily the finest CRT monitor I've ever laid my eyes on. We cheated a bit by letting this monitor into the roundup, but we really had to, as the simple truth of the matter is that Sony don't sell 19" monitors any more, and the 21" G520 was so darn good that we just had to include it.

For the majority of the 45 different image quality tests, this monitor scored a whopping 10 out of 10. There were a couple of scores of nine, but it offered far and away the finest image quality of the lot. In fact, it was so impressive that we used this as a benchmark to compare all of the other monitors to it. And it's now

our testbench monitor for image quality testing on video cards. Told you we liked it.

Like all Trinitron tubes, there are a couple of thin black horizontal lines across the screen, but you'll soon forget these exist. Especially when you see the incredibly vibrant colours, or even the geometry accuracy that rivals that of a TFT.

If there was one problem with this contender, it's that the monitor exhibited rolling "waves" when set to 100Hz. However, as soon as we dropped the refresh rate to 85Hz these immediately disappeared entirely.

There's really not much left to say. This is without a doubt the pinnacle of CRT monitors, but only those with - ahem - rather padded trust funds need apply. Anyways, I've got to go now, as I'm about to hock my mother to pay off my shiny new G520...



## PCPP Score

Image Quality: 5/5 Overall: 5/5





# Audigy2 ZS Platinum Pro



• Price: \$499 • Distributor: Creative Australia • URL: [www.australia.creative.com](http://www.australia.creative.com)

The Audigy2 ZS is an eight-channel soundcard and it boasts some very impressive features for audiophiles and gamers. Is there anything wrong with this card? There is nothing you can't plug into the ZS and it's born to perform. The Pro version features a fully enclosed external breakout box with connectors galore and some outstanding software. Each sound channel has its own Digital to Analogue Converter and vice versa. The converters are supplied by Cirrus Logic and Philips rather than AKM which are used on other high-end cards, but that's still a change from the Burr-Browns and Crystals on previous models.

For gaming there's full EAX 3.0 ADVANCED HD support, as well as v-4.0 support ready for download, positional audio, sixty four 3D hardware voices and some very stable drivers. EAX 4.0 will introduce the spatialisation of multiple reverberant environments along with an extensible library of audio effects algorithms. Basically we're looking at multiple, simultaneous audio environments and effects in real time. This card is future-proofed. The test rig was a DKV3D Athlon 2600+, Corsair CMX512-2700C2, Win XP Pro (SP1) running on RAID0 ATA100 disks. I hooked the ZS up to Videologic's ZXR-750 7.1 speaker set as well as my Onkyo

AV. The drivers are very well implemented, with nearly everything you need in one applet. All settings ranging from speaker setup to bass management to surround field selections are accessible.

As for the drivers themselves, system stability was never an issue unlike previous incarnations of "Audigy Driver Hell". You can enjoy up to 7.1 surround in existing 3D games using Creative's Multi-Speaker Surround 3D Audio Technology applet. The ZS plays back DirectSound3D games in 5.1, 6.1 surround with additional rear centre channel, or 7.1 surround in rear centre surround or side surround configurations. The CMSS technology allows all stereo recordings, including MP3/WMA, CDs, VCD and movies to be played back in 5.1/6.1/7.1 surround with DVD movies. Gaming performance and embedded sound effect technology focused on some EAX 3.0 games: Tomb Raider: Angel of Darkness, Unreal Tournament 2003 and Serious Sam:SE. Tomb Raider's rendition of environmental effects was superb: Reverb, Occlusion, Morphing and Panning delivered life-like effects such as smooth transitions between water and air or open spaces and tight corridors. The ability to deliver over 60 3D hardware voices and a large buffer means that

the ZS won't choke on complex sound scenes and will be able to deliver each sound event as it's required. Some game reverb engines aren't of the same quality as the ZS, but which reverb engine sounds best is very subjective. Synthetically, the ZS is better than the Audigy2 in speed due in part to the new chipset as well as enhanced driver support.

I tested it in Q3 and found, however, the performance difference to be slight but we're getting an extra sound channel, more fidelity and more effects. Those with 1GHz or faster systems won't even notice a difference. Besides losing a few frames, you won't notice anything if you play games higher than 640x480, and even then, the differences are but a few frames. Remember, at resolutions of 1280x1024 and up, the videocard's fill-rate and memory bandwidth will usually limit the performance in games, not the soundcard. At high-res there is little or no difference between EAX "on" and EAX "off": in the Serious Sam:SE Jaguar demo at 1024x768, I lost 2fps with EAX "on". In UT2K3, it was a little more but still wasn't really noticeable. I played a range of DVD movies and music formats

ranging from  
vocal to

instrumental. DVD playback and music fidelity is simply superb, even over wide dynamic ranges and extreme sound stages found in Saving Private Ryan, True Lies and Gladiator. The bundled software will suit gamers and gifted amateurs: full versions of Rainbow Six 3 and Tomb Raider: The Angel of Darkness; Steinberg Cubasis VST 4.0 Creative Edition, Wavelab Lite 2.0 and Image Line FL Studio 4.

What's wrong with the ZS? Not much! A second backplane slot is required for the joystick/MIDI port, no USB port and... umm... well, EAX 4.0 games like Jedi Academy and Ghostmaster are due out about now...

Stuart Calvin

## SPECIFICATIONS

- 108dB SNR across all eight channels
- THX Multimedia Certification and THX Setup Console
- EAX 4.0 ADVANCED HD ready
- DTS-ES and Dolby Digital EX decoding
- Karaoke feature
- External I/O drive with optical and co-ax S/PDIF and analogue I/O ports, MIDI I/O and a FireWire port
- Cordless remote control
- Mic-in; ASIO 2.0 support



## PCPP Score

This card is a leap into high-end sound: high-fidelity music, quality home theatre and completely new echelons of in-game sound.

# 92





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# Abit IC7-MAX3

• Price: \$420 • Distributor: Altech • URL: [www.altech.com.au](http://www.altech.com.au)

**R**iding the second wave of i875P-based motherboards into the PCPP labs is the ABIT IC7-MAX3, and like its vanilla flavoured predecessor, this board certainly looked promising. As seen in ABIT's previous range of MAX motherboards, the IC7-MAX3 is best described as a souped up version of the regular IC7, featuring a whopping 6-channel serial ATA 150MB/s RAID configuration consisting of the Silicon Image 4-port controller and the native 2 channels supported by the ICH5R southbridge, four dual-channel DDR400 DIMM slots supporting up to 4GB of memory, Intel flavoured Gigabit Ethernet, 6-channel AC97 audio, four USB 2.0 ports and two IEEE 1394 (firewire) ports. Rounding out the board's feature set is the inclusion of ABIT's own "SecureIDE" device, ensuring that, unless a security key is in place, the contents of your hard drives cannot be accessed. This is reinforced by 40 bit DES style hardware encryption.

Like the previous boards in the MAX lineup, the IC7-MAX3 is, aside from the floppy connector, legacy free, lacking both serial and parallel ports which many are now finding redundant. Although this may be an issue for those with pre-historic peripheral devices, it was a necessary and welcomed measure for ABIT to make room for the newer, more advanced technologies mentioned above. Similarly, CNR, AMR and ISA slots are nowhere to be seen because, aside from OEMs, these slots are rarely used these days and usually waste space on the motherboard that

could be used for more important purposes. Instead, despite the copious amounts of onboard controllers, the IC7-MAX3 includes five PCI slots, as well as an AGP 8X slot - more than sufficient, even if you don't plan on using any of the onboard functionality.

Another feature that is unique to the IC7-MAX3 is the fabled OTES cooling system (first seen on ABIT's Ti4200 graphics card range, but never before on a motherboard). As you can see in the image, this is simply a fan positioned inside a plastic duct that expels heat produced by the motherboard's capacitors, MOSFETs and transistors outside of the case. Although, as you will soon learn from our overclocking results, this has not had much of an impact on performance, it should nevertheless decrease your case temperatures by quite a significant margin (ABIT is claiming up to 30%).

As far as layout is concerned, it is clear that ABIT has taken note of the criticisms made in our previous reviews, as we found it literally impossible to fault the IC7-MAX3's layout. Firstly, as expected, there is plenty of room around the CPU socket for any exotic heatsink/fan units you may be considering, although some may find that the OTES mechanism is a little too close for comfort. This, however, is not an inhibiting factor and will go unnoticed by most users. As well as this, the fan headers and ATX power header are positioned in such a way that the cords do not restrict airflow by running over the top of the heatsink/fan unit, and the DIMM slots are positioned a sufficient

distance away from the AGP slot to avoid any installation issues. Finally, the SerialATA and regular ATA100 connectors, as well as the floppy connector are located on the very edge of the board, allowing for neat cabling and unrestricted installation of new components once the motherboard has been installed into a case.

The board was tested on our regular test bed as listed on the PowerTools page, using our suite of CPU/Motherboard benchmarks. As you can see from our results, the performance difference between the IC7-MAX3 and the regular IC7 is negligible, which was to be expected as both boards are based around the same chipset and utilise an identical driver set.

As per usual, the IC7-MAX3 uses ABIT's standard jumper free BIOS, featuring all of the overclocking options one could ask for including extensive voltage adjustments, fsb adjustments, DRAM ratios and the ability to lock your AGP/PCI speeds at 66/33MHz respectively so as to reduce problems whilst overclocking. Using conservative memory timings of 3/3/7/4, a CPU voltage of 1.75V and a memory voltage of 2.75V, we managed to overclock our multiplier unlocked Pentium 4 3.2GHz processor to an fsb of 290MHz with a CPU:DRAM ratio of 3:2. Conversely, with these same settings, our regular IC7 clocked an fsb of 300MHz. Although this isn't a significant difference and could simply

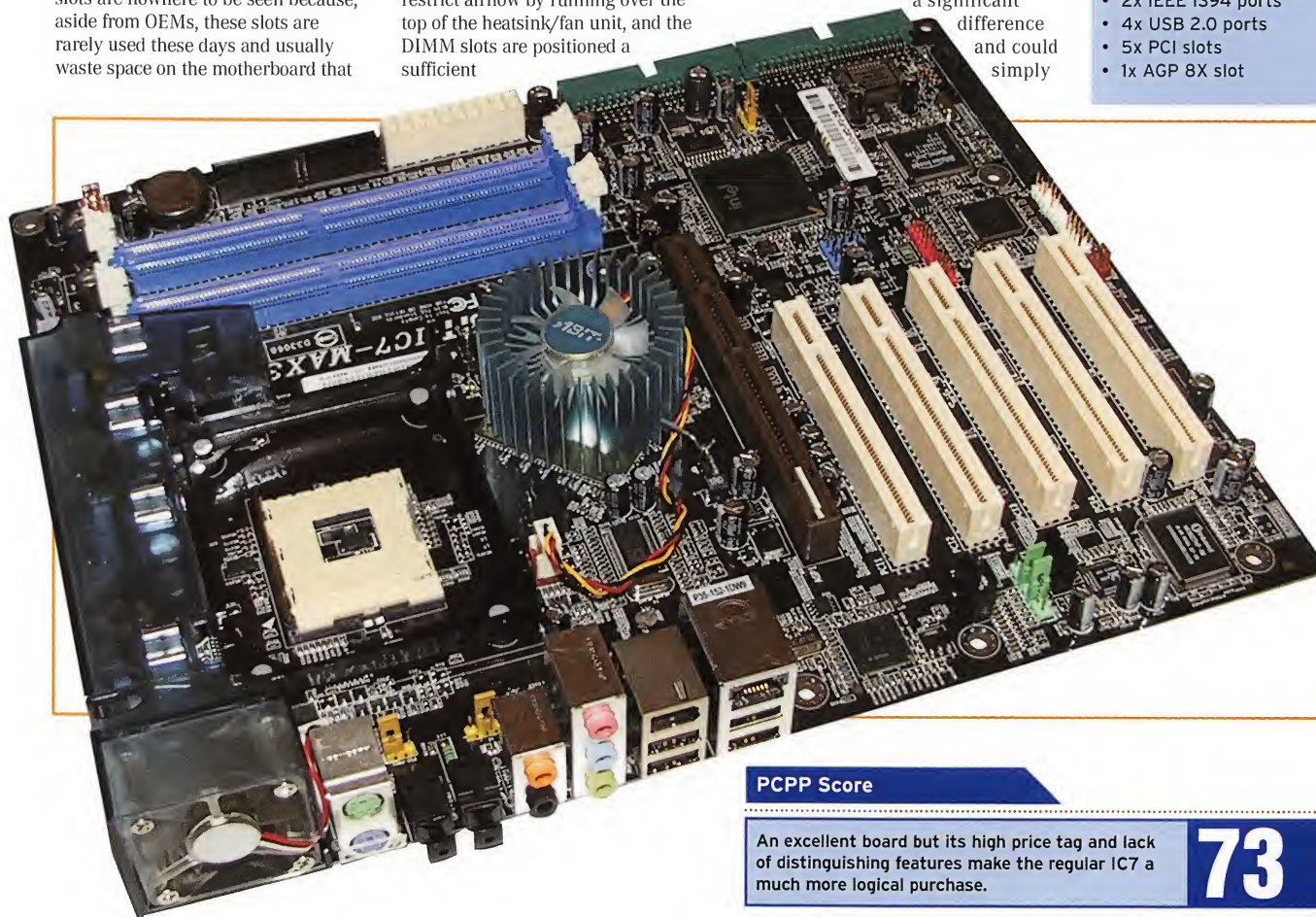
be due to our particular board, it is nonetheless disappointing as ABIT claimed higher overclocking potential. Similarly, while ABIT asserts that the IC7-MAX3 allows for increased memory speeds in particular, using a 1:1 CPU:DRAM ratio we were able to overclock our memory to 260MHz (520MHz DDR), which again is slightly lower than the regular IC7 which reached 265MHz (530MHz DDR).

While these are still some very impressive results, they certainly reveal that the regular IC7 is a much more logical purchase if you're simply after pure performance and overclocking results, especially due to its relatively low price of \$241, when compared to the MAX3's whopping \$420 price tag. The bottom line is, unless you desperately need the extra SerialATA ports or SecureIDE feature offered by the MAX3, we'd suggest that you stick with the equally impressive, yet significantly cheaper regular IC7 instead.

Asher Moses

## SPECIFICATIONS

- 800MHz FSB Support
- 4x PC3200 DIMM Slots (up to 4GB)
- 6-channel SerialATA
- 6-channel AC97 audio
- Gigabit Ethernet
- 2x IEEE 1394 ports
- 4x USB 2.0 ports
- 5x PCI slots
- 1x AGP 8X slot

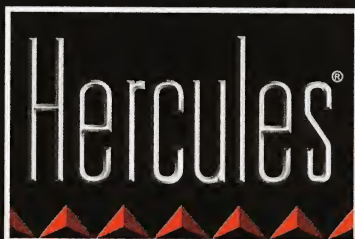


## PCPP Score

An excellent board but its high price tag and lack of distinguishing features make the regular IC7 a much more logical purchase.

73





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# Vapochill Cooling Case



• Price: \$1200 • Distributor: PC Range • URL: [www.pcrange.biz](http://www.pcrange.biz)

**O**kay, enough mucking around. Frankly, I'm sick to death of pitiful fans, chunks of copper, plastic water tubing and aquarium pumps. When I want my CPU chilly, I want to use a fridge.

The Vapochill from our old friends at Asetek is a massive, heavy, power-guzzling monster of a case that uses essentially the same technology as found in a regular fridge or air conditioner to lower your thrashed-out core to positively Antarctic temperatures.

Built into an oversized ATX case, the cooling system takes up the top third of the unit and includes a compressor, a condenser and the CPU block which acts as the evaporator.

The system works like this. Freon R134A is pumped into the compressor and heated. It's then squirted into the condenser which cools it and, well, condenses it into a liquid. With me so far?

The liquid Freon is then fed into a capillary tube which allows the high-pressure liquid to quickly 'flash' back into a gas. This results in the evaporator (the CPU block) coils being bathed in Freon gas chilled to well below freezing. The gas then sucks any heat from the block head and is returned to the compressor to repeat the process. Got it? Phew.

What this means for us is a cooling system that doesn't just drop the temperature of the CPU a few degrees, it drops it to well below freezing. The system tries to maintain a default temperature of -22 degrees Celsius, but tweaking of the included CoolChill utility can coax an extreme low temperature of -30.

So, what are the advantages of

running your CPU in an environment similar to a South Pole summer? In three words - stable, safe overclocking.

As we've said on more than one occasion, real men run their P4 2.4C CPUs at 3GHz. Sure, the core runs at 60 degrees instead of 36, but we don't care. We know that by the time the CPU has fallen in a heap due to high-temperature stress, shaving maybe two or three years of its lifespan in the process, we will have replaced it anyway.

The real advantage of the VapoChill is that high temperatures are no longer an issue. The core stays up to 60 degrees colder than it was designed to run at. You can overclock with impunity.

Actual results are rather less impressive. Well, let me rephrase that: the results are damn impressive, but not so damn impressive that I'll be running out to buy this case which, although many folks find attractive, I think is pig ugly.

We tested the redoubtable 2.4C and a newer 800MHz 3GHz Pentium 4, and compared the results with other 'extreme' coolers, particularly the Corsair HydroCool 200 water system.

We found that 2.4C could manage a top speed of 3.3GHz. And I for one am not going to be spending \$1200 on a system that gives me 300MHz of speed above a stock air cooler. Of course, to be fair to a system this extreme, we do need to throw a slightly beefier chip at it, which is where the 3GHz part comes in.

We had high hopes of breaking the mythical 4GHz barrier, but alas even with the VapoChill's promised maximum load of 100W, we simply couldn't get the CPU to behave above 3.97GHz. So close, yet so far. (note from Bennett - Anthony was a little scared about frying his CPU, so only pushed it to 1.8V. Expect a better overclock with 2V or so, which should be safe in this case.)

Of course, 3.97 is as near as damnit 4GHz so perhaps we will forgive the VapoChill the fine margin and shout WOOHOO! That is very nearly a whole gigahertz of "free" speed, if you write off the \$1200 cost of the case.

Those of you who read widely may now be tutting tutting and saying "but I saw a 4GHz P4 on website such-and-such using this case" and indeed you did. However, the various 4GHz projects around the place use a lot more than just this case and a standard motherboard - in fact many have additional water coolers and some even use a second VapoChill unit to cool the northbridge - and here's the rub.

The VapoChill is not a complete cooling solution, it's just a CPU cooler. It's a CPU cooler the size of an extremely large, heavy case, and it's complicated to install ("The CPU unit is installed with a series of 14 easy steps!" the manual cries proudly. Only 14?) and on top of that, the PSU mounting is one of the more... esoteric we've seen, resulting in a hideous tangle of cables inside.

With all this industrial strength equipment bolted into the case, you'd be forgiven for being a little nervous about how loud this thing is. Fortunately, it's very quiet, barely noisier than a standard air cooler. There's a different quality to the noise, it sounds more heavy and mechanical, but all in all we'd have to describe the case as quiet.

The case itself is not particularly special. The jaggedy-arse aluminium inside slices as it dices as it peels, and there are no removable hard drive cages or similar niceties. There

is a removable motherboard tray, but it doesn't slide out, so you have to pull out all your PCI cards before using it.

The VapoChill has extreme CPU cooling power and will allow you to run your overclocked CPU for as long as you like without fear of heat death or similar stresses. The system has excellent attention to detail to prevent the build up of condensation, so it's safe and reliable. But don't think it will solve all your heat problems or allow you to OC cheap chips to ridiculous speeds. This is one for the rich kids.

**Anthony Fordham**

## SPECIFICATIONS

- Freon phase-change cooler
- Built-in ChillControl system controls
- Two built-in fans
- Capable of -30 degrees cooling
- Maximum capacity of 100W

## DON'T MAKE A MISTAKE

Here's the thing - in designing this case to minimise problems that could arise from condensation, Asetek has employed components that aren't easy to remove should you decide that the particular mobo you installed isn't for you. Heating pads must be stuck to the rear of the mobo, gallons of heat conductive paste must be applied to the pin holes in the socket and the underside of the CPU (weird, yes) and bits of insulating foam have to be glued on here and there. Installing a VapoChill should not be undertaken lightly. If it does all go nasty on you, replacement pads and insulation can be purchased in a kit for about \$50.

## PCPP Score

Cheap case construction and awkward PSU placement detracts from the sheer cooling power and overclocking potential of this beast.

89





# PHARAOH'S CURSE

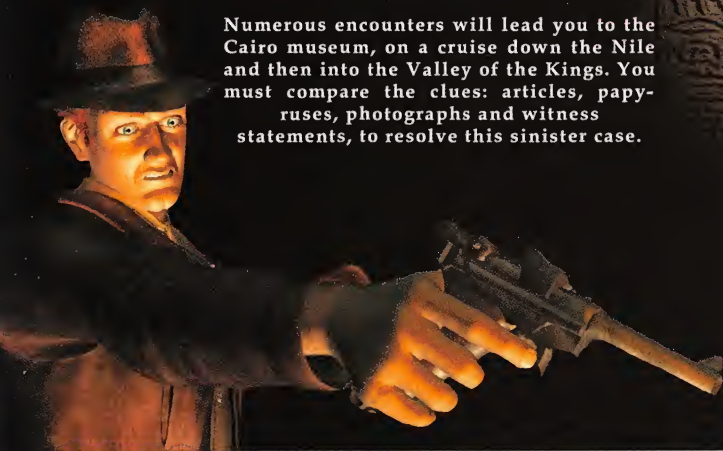
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# ASUS P4P800S-E

• Price: \$249 • Distributor: Asus • URL: [www.asus.com/products/mb/socket478/p4p800s/overview.htm](http://www.asus.com/products/mb/socket478/p4p800s/overview.htm)

With the raging battles currently taking place in the high-end realm, it's often easy to lose sight of the reality that the majority of consumers are not going to be after cutting-edge wares, but rather a product that offers the best blend between price and performance. In other words, value for money often takes priority over raw performance figures, which makes sense really. Would you rather have an extra couple of hundred bucks left over from your next motherboard upgrade to pour into your ritual Friday night trip to the Oxford Tavern jelly-wrestling comp, or spend your entire budget just to gain an extra 10-20 frames in Quake? Thought so.

In recent months, the most successful budget motherboard chipset to hit the market has been the Intel 865 chipset, and although offering an excellent mix of performance, stability and overclockability, boards based around this chipset tend to lack features which are now mandatory such as firewire ports, onboard audio, and onboard LAN. This is likely to be due to the fact that they do not want to detract from the sales of their high-end i875-based boards. Looking to bridge this gap, Intel has recently announced the i848P chipset. From what we've seen so far, this is not necessarily directed at enthusiasts, but rather at those of us who plan on making extensive use of onboard features.

This can particularly be seen in the P4P800S-E board, which includes features such as 802.11b Wi-Fi (11Mbps), Intel Gigabit LAN, two SerialATA ports, AGP 8X, 6-channel audio provided by the ADI AD1985 SoundMAX chip, four USB 2.0 ports, one IEEE1394 port, 5 PCI slots and most importantly, support for Intel's upcoming Prescott chip. As far as features and future-proofing are concerned, the i848 beats the i865 hands down.

Upon further inspection of ASUS's specifications sheet, we were surprised to discover that, unlike the i865, the i848 only works in a single-channel memory configuration, with the ASUS board featuring three DDR400 DIMM slots supporting up to 2GB of memory. This isn't too much of an outrage if we remember that this is a budget chipset. Nonetheless, it will be interesting to see how it performs.

As one would expect from ASUS, the layout of the P4P800S-E is flawless, with the ATX power connector, floppy connector, serial ATA ports and ATA100 connectors being located at the edge of the board, ensuring that they do not obstruct your heatsink/fan unit. Furthermore, the position of the DIMM slots ensure that even the longest of graphics cards will not interfere with the installation of memory modules. That said, although there is obviously plenty of room around the CPU socket for the stock standard Intel cooler

which most of you will be using, if you plan on using a unit that is larger than the existing HSF cage, the line of capacitors located next to the socket may cause some headaches. This won't even apply to most of you, but it is still something to keep in mind nonetheless.

The board was tested using our regular PowerTools test bed, and as expected, the lack of dual-channel memory support slightly detracted from the P4P800S-E's performance. That said, this is not a huge margin by any stretch of the imagination and the only significant difference was seen in the Jedi Knight 2 benchmark. Furthermore, much to our surprise, using the bundled Wi-Fi kit to connect the board to a network was extremely simple, with a network connection being picked up as soon as we assigned the adaptor a gateway and IP address.

The P4P800S-E's JumperFree BIOS includes all of the tweaking options one would expect from an enthusiast board, however, none that are notably different from other enthusiast boards such as those produced by ABIT. With regards to overclocking, using a 3:2 CPU:DRAM ratio we were able to clock the fsb at 280MHz, which is quite a meagre result if you consider that our ABIT IS7 comparison board based on the i865 chipset clocked a whopping 300MHz.

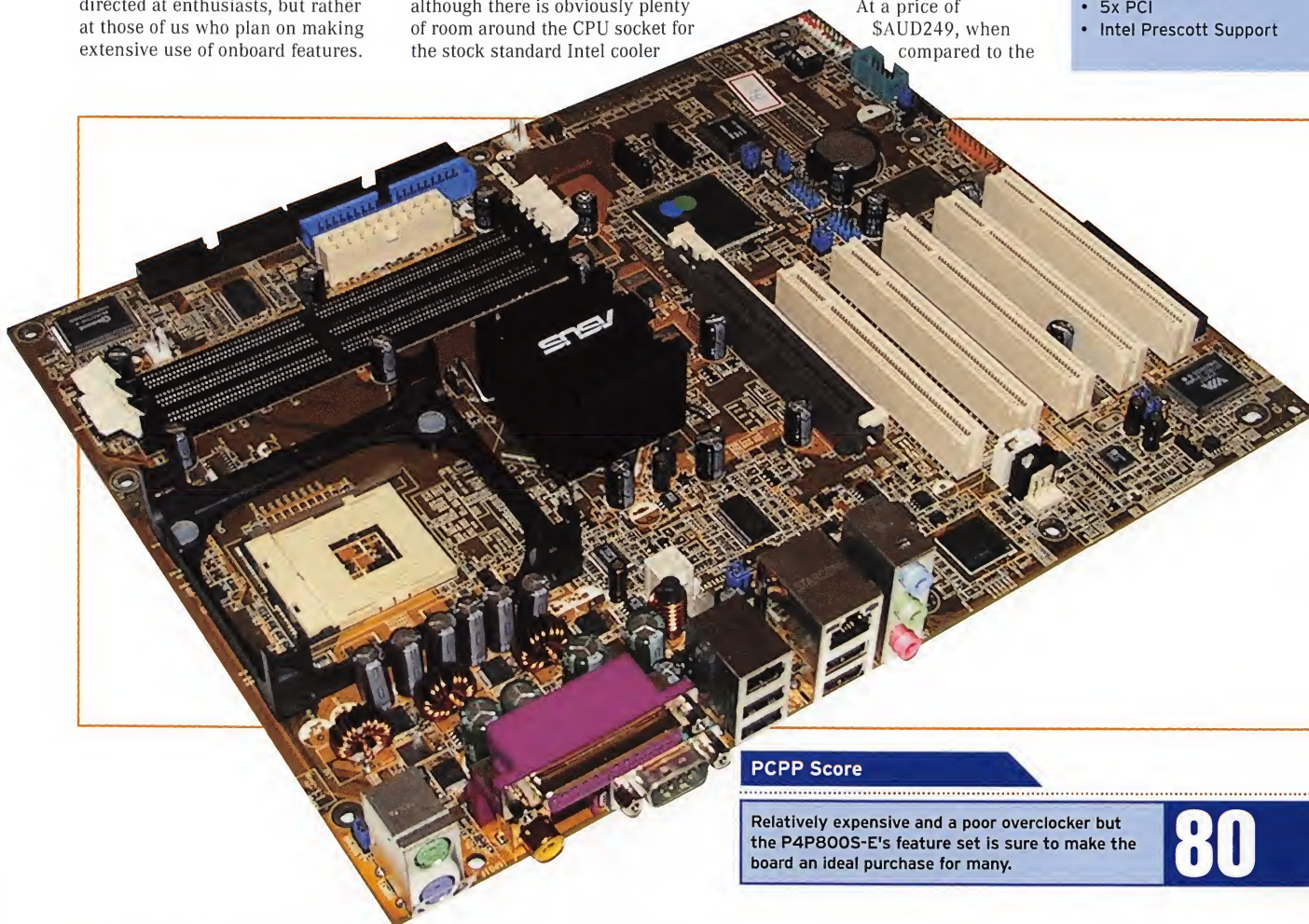
At a price of \$AUD249, when compared to the

ABIT IS7 which retails for \$AUD214, the P4P800S-E and the i848 chipset as a whole doesn't look too attractive from a value standpoint. That said, it does include a number of extra features such as Wi-Fi, Gigabit LAN, 6-channel audio and firewire ports, which should account for much of the price increase. Furthermore, those that are after a slightly less feature-rich board can obtain the regular P4P800S for just \$167, which is quite a bargain indeed. In the end, it really comes down to what you're looking for in a motherboard. If you're an overclocker looking for an inexpensive board and don't believe you'll make extensive use of onboard features, the IS7 and i865 chipset is likely to be a more logical purchase. If you're after a relatively inexpensive, high performing board and willing to pay a little extra for a premium feature set, the P4P800S-E is certainly a worthy solution.

Asher Moses

## SPECIFICATIONS

- 802.11b Wi-Fi
- Intel Gigabit LAN
- 2x Serial ATA
- 4x USB 2.0
- 1x IEEE1394
- 6-channel audio
- 5x PCI
- Intel Prescott Support



## PCPP Score

Relatively expensive and a poor overclocker but the P4P800S-E's feature set is sure to make the board an ideal purchase for many.

# 80



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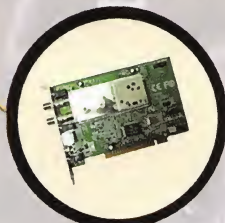
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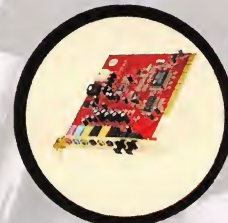


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# Ennyah Digisound II MP3 Player



• Price: \$247 • Distributor: Capax Techonlogy • URL: [www.capaxtech.com.au](http://www.capaxtech.com.au)

The latest product to come out of the Taiwanese manufacturer, Ennyah, is looking to capitalise on the latest craze in consumer electronics - USB portable audio players.

The first and arguably most significant advantage of such a device is that, unlike regular CD players, USB-based flash disks do not have any moving parts and thus, you can shake them around as much as you like (i.e. whilst jogging), and you won't get one skip in your track (no pun intended). What's more, this also means that the player consumes far less power, allowing it to run for approximately 15 hours off one AAA battery.

Installation is as simple as dropping in a battery and pressing the Power button, and putting songs on the device is an equally painless affair. As the flash disk is plug and play, you are able to connect the device via a USB cable directly to your PC and, without rebooting, drag and drop tracks directly onto the drive. Regardless of filename,

the player will automatically read track and artist titles from the ID3 tags and display these on the 96x26 pixel LCD display (26x10mm). While navigation of your track list is fairly simple using the joystick-like device on the underside of the player, we were slightly disappointed to see that Ennyah did not include a function which lists each track, allowing you to painlessly select the one you're after. Rather, you're forced to tediously flick through each one, which can become quite frustrating if you're planning on filling up the entire 128MB that this player provides.

Ennyah's tech specs boast the ability to write at 400kps and read at up to 540kps using USB 1.1 connectivity. Judging from our internal testing, this seems to be

fairly accurate, as we were able to transfer a 4MB MP3 file in about 7-8 seconds. As far as the voice recording feature is concerned, the DigiSound II can record for up to 10 hours in 32kbps, 4-bit, Mono, 8kHz mode using the built in microphone - very handy for Uni students who like to record their lectures. Also, the FM radio feature also proved to be extremely useful, as it comes with the added ability to record songs from the radio on the fly.

While we expected the stock Ennyah-branded headphones to perform poorly, we were pleasantly surprised. Volume levels were more than sufficient for even the most rave-damaged ears, and reproduction and clarity was equally satisfying.

If you're looking for a high quality, high capacity, light-weight MP3 player that won't cost you an arm and a leg, you'd be foolish not to give the Ennyah Digisound II a second look.

**Asher Moses**

## SPECIFICATIONS

- USB 1.1
- Supports WMA and MP3
- 128MB
- Supports Windows and Macs



## PCPP Score

Great sound quality, compact size and most importantly, excellent value.

**89**

# VideoLogic ZXR-750



• Price: \$379 • Distributor: VideoLogic • URL: [www.videologic.com.au](http://www.videologic.com.au)

The ZXR-750 speaker set is very impressive with terrific sound and versatility, but there are compromises like any multimedia bundle in-a-box. Its nifty features include ConnX.1 technology that enables you to configure the ZXR-750 optimally for any multi-channel source whether 5.1, 6.1 or 7.1 channels. The Surround Field Enhancement technology goes one step further and not only ensures that the ZXR-750 can handle 5.1 material, but improves it by creating two distinct rear audio channels. SurFE takes the existing surround channels and uses a subtractive differential filter with directional keying to generate another two separate back surround channels, giving true 7.1 output from a 5.1 source.

Additionally, there is an auxiliary stereo input enabling simultaneous connection to a 2-ch sound card, TV, video or CD/DVD unit for 2.1 playback. The magnetically shielded 5-inch 28W

driver delivers deep, clear bass and pumps out gamey 'oomph' when you expect it. There are eight RCA-phono inputs, seven phono speaker outputs for multi-channel playback and the auxiliary phono inputs. I'd have preferred a co-axial input to avoid cable hell, but at this price point - not today. The controls are all on the sub but there should be few head banging visits under the desk once it's set up. There is a combined volume

control and on/off switch on the front panel with individual controls for centre, rear and subwoofer.

On the back is the switch for either multi-channel or auxiliary output and the ConnX.1 technology switch. Toggling has never been so much fun. The satellites are moulded plastic cabinets with a magnetically shielded 1-inch cone.

The front and centre cables are 3m and there is 8m for the

surrounds and rears. I tested using the Audigy2 ZS 7.1 soundcard using various DVD movies, music formats and EAX supported games. Gaming was a hoot and is kind of creepy with all those noises behind you. The sound tracks and effects from EAX 3.0 game, Angel of Darkness, were superb. The DVD movie action scenes from The Matrix and Saving Private Ryan were awesome; does SFE work? You betcha! Digital music formats are faithfully reproduced and sounded impressive.

**Stuart Calvin**



## SPECIFICATIONS

- Fronts, rears and centre 8W RMS
- Subwoofer 28W RMS
- Frequency response: 18kHz to 22 kHz
- Five 3.5 mm stereo jack to dual phono cables
- Five dual phono to dual phono cables and integrated speaker cables
- Removable speaker stands for all satellites
- Two years warranty

## PCPP Score

Great entry price point for a multi-speaker setup. Possibly the best mid-range boxes on the street.

**90**



# AVerMedia AVerTV DVB-T

• Price: \$223 • Distributor: Altech • URL: [www.altech.com.au](http://www.altech.com.au)

Digital television is the AV technology of the future. There's no way to get around the fact. In a few short years all Australian stations will be ending all analogue transmissions, opting instead to carry all their transmissions on a digital carrier. What this means is that, like it or not, everyone who wants to be watching TV after 31 December 2006 had better start thinking about how they'd like to receive their signals. The advantages of digital TV are many - crystal clear DVD quality images and high-definition sound as well as better reception strength and the possibility of datacasting - sending extra information in the transmission, such as removable subtitles or optional audio commentaries. Unfortunately as it stands, without forking over unfeasibly large amounts of cash for digital ready HDTV sets, there is little people can do to take advantage of the new technology.

## PCPP Score

Why bother buying a standard TV Tuner card when you can get crystal clear, beautiful sounding DTV for only a little more money?

90

## SPECIFICATIONS

- PCI
- Remote Control
- Includes pause, record and capture features

Sure, people can get set-top boxes but watching digital TV on a standard set is kind of like playing your favourite games at minimum resolution with all of the texture options turned down - kind of pointless.

If you want your DTV with all the trimmings but can't afford an expensive new TV, never fear, the awkwardly named AVerMedia AVerTV DVB-T is a neat little PCI card that allows you to watch digital TV and listen to digital radio right on your PC - at the proper resolutions. Aside from being cheaper than the majority of set-top boxes, the DVB-T comes with a host of extra features that

make it an attractive purchase for any person serious about turning their PC into the hub of their home entertainment system. As well as watching digital TV, the DVB-T allows users to record programs in MPEGII format, pause, replay a scene, capture images from TV or other connected AV devices (video, DVD, camcorder) or send the signal to a standard television.

Installation is refreshingly simple - simply plug in the PCI card, connect the remote control jack, connect an aerial (roof mounted or rabbit ears) to the card, install the drivers and scan for available channels. Although digital TV is still a young industry in Australia, the DVB-T offers a cheap and very attractive alternative to a standard TV tuner card.

Daniel Wilks



# Creative Nomad MuVo NX 128Mb

• Price: \$299 • Distributor: Creative Labs • URL: [www.australia.creative.com](http://www.australia.creative.com)

With the advent of the new Creative Nomad MuVo NX, Verne "Mini-Me" Troyer is no longer the smallest and sexiest thing on the market. At 74mm long and weighing in at a whopping 43g (with battery) the MuVo NX is slightly larger than it's predecessor, but the range of features and clear signal quality more than make up for the excess size. Utilising the now familiar thumb drive and battery hub design, the NX plugs directly into any available USB port, allowing files to be dragged and dropped into the player.

Although the basic design of the unit closely resembles the earlier MuVo players a few subtle differences really mark the NX as an evolution in design. The most obvious is the backlit LCD display on the drive allowing for easy navigation of the various play menus and EQ functions. A slightly less apparent feature is the inclusion of a scroll wheel for easy navigation of menus. Creative have

thoughtfully included the ability to flip the LCD 180 degrees, so lefties should have no problem using the player comfortably without needing to resort to reading everything upside down. Although the player comes bundled with the standard interface and music ripping software, all the drivers are needed for are initialising the player - all other operations are simply a matter of dragging and dropping files.

The 128MB thumb drive can store around 30 tracks recorded at 128kbps, giving you around 2 hours of aural pleasure. Whilst the 90dB SNR (Signal to Noise Ratio) offers up the excellent sound quality we've come to expect from creative, the MuVo NX could do with a few more milliwatts to really pump out the

noise. Clear sound is all well and good but sometimes you also want your music to be loud. Aside from playing music, the MuVo NX can be used both as a portable HDD and voice recorder with up to eight hours recording time. Whilst neither function really blew us away, they

do add extra legs to the product - using a dictaphone to record interviews is fine but they don't play music. Maybe if we smile at Creative long enough, they'll let us keep the product sample.

Daniel Wilks

## SPECIFICATIONS

- 36.7x74x16mm
- 43g with battery
- Around 11 hours battery life
- 90dB SNR
- USB 1.1

## PCPP Score

Tiny, light and offering excellent audio quality, the MuVo NX is another in the line of quality MP3 players from Creative.

89





## Bennett Ring Powertools

While it would make our jobs a heck of a lot easier if we could review hardware based on the shininess of the packaging it arrives in, we're pretty sure our beloved readers are a little more interested in how the hardware actually performs. Which is why we have the PC PowerPlay PowerTools - batteries not included.

If you're anything like us, you probably don't give a rat's arse if Word will open three seconds faster on the new

Pentium 64, or if you can compress a zip file more speedily using DDR6-8000 memory. Nope, this is PowerPlay, so it's all about how well your games will perform.

Our PowerTools are broken into two categories, videocard tests and CPU/motherboard/memory tests, and you'll notice that most of these are based on real world game engines. We spoke to Intel, AMD, NVIDIA and ATI about which games to use to benchmark our hardware, and

after tossing out their biased recommendations settled on the following applications for the majority of our tests. Of course, every now and then a unique piece of hardware will arrive that can't be tested properly using these applications, and in these circumstances we'll use the most appropriate benchmarking software.

We also use test benches (a fancy way of saying a PC outside of a case, waiting to electrocute unsuspecting

hardware newbs), standardised hardware platforms that ensure our benchmark results can be compared to each other month after month. As better benchmarks are released, we'll strive to include these in the PowerTools section, and with the imminent release of a few big name DX9 titles, you'll see a couple of changes over the coming months. But until then, here are the benchmarks that we'll be using to put new hardware through its paces.

### CPU Tests

#### 3DMark03 CPU test

While the videocard tests in this are of a questionable objectivity, nobody denies that its CPU test is a nice way to give processors a thorough workout. And hey, it's bloody easy to use and free - 'nuff said.

#### Jedi Knight 2

This CPU bottlenecked application is one of the more taxing CPU tests around. And we couldn't ignore a benchmark that includes lightsabres. We run this test at low resolution (640x480), with texture details lowered, and geometry details maxed out.

#### [H]ardOCP Unreal Tournament 2003 test 2.1

Gotta love a benchmark that is good for both videocards and CPUs. We run the CPU test of this benchmark at low resolution, and it's one of the finest indicators of CPU performance available.

#### Comanche 4

Sure, it sucked as a game, but as a CPU/motherboard/memory

benchmark this is a beauty. We run this at 640x480 resolution to make sure it's the CPU that's carrying the load, not the videocard.

### Videocard Tests

#### Quake 3 Arena v1.32

This OpenGL golden oldie is the most prolific game benchmark around. We run this test at 1024x768, 1280x1024 and 1600x1200, with all graphics settings at their highest.

#### 3DMark2001 SE v330

An excellent DirectX 8.1 benchmark, we're still waiting for games to look this bloody good. Unlike its newer sibling, 2001SE doesn't have a reputation for being incredibly biased. We run this at the same resolutions as the Q3A test.

#### Serious Sam: Jaguar Demo

Throw dozens of detailed enemies into a massive, gorgeous level and you've got a benchmark that is guaranteed to make your videocard howl in pain. Once again, we test at the same resolutions as the Q3A test.

### TEST BENCHES

#### Intel Test Bench (x2) Intel Pentium 4 2.6C

HIS RADEON 9700 PRO  
www.akatech.com.au  
Corsair 2 x 256MB XMS3200LL  
DDR400  
www.altech.com.au  
Seagate Barracuda 7200.7 160GB  
ATA100 Hard Drive  
www.seagate.com  
ABIT IS7 865PE motherboard  
www.altech.com.au  
TOPOWER 470W PSU  
www.auspcmarket.com.au  
Mitsubishi Diamond View  
2115e 21" monitor  
www.mitsubishi.com.au  
Microsoft multimedia keyboard  
and optical mouse  
www.microsoft.com.au  
Windows XP Professional  
www.microsoft.com.au

#### AMD Test Bench (x1) AMD Athlon XP 2600+

HIS RADEON 9700 PRO  
www.akatech.com.au  
Corsair 2 x 256MB XMS3200LL  
DDR400  
www.altech.com.au  
Seagate Barracuda 7200.7 160GB  
ATA100 Hard Drive  
www.seagate.com  
ABIT NF7-S  
www.altech.com.au  
TOPOWER 470W PSU  
www.auspcmarket.com.au  
Mitsubishi Mitsubishi Diamond  
View 2115e 21" monitor  
www.mitsubishi.com.au  
Microsoft multimedia keyboard  
and optical mouse  
www.microsoft.com.au  
Windows XP Professional  
www.microsoft.com.au



www.akatech.com.au



www.corsairmicro.com



www.auspcmarket.com.au



www.intel.com



www.abit.com.tw



www.amd.com



www.seagate.com



www.hightech.com.hk



www.altech.com.au

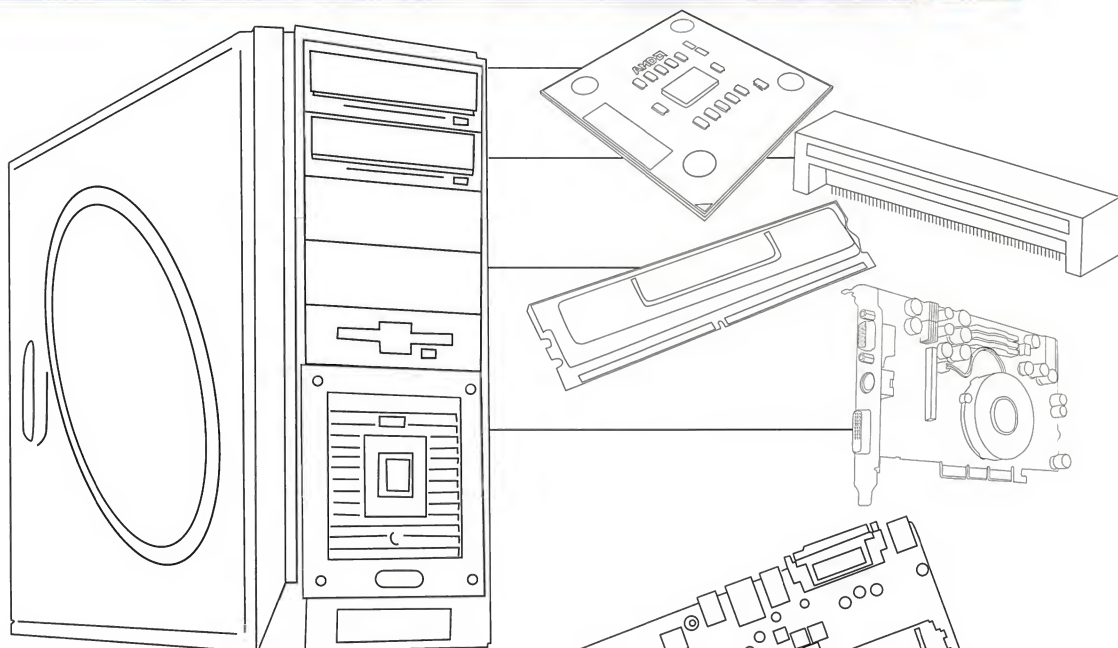




## Stuart Calvin

# Decrypt

**B**eginning a network from scratch is a daunting task for anyone who wants to start their own network. Not only is there much to learn, but the idea of going from one computer to two or three or four and acquiring all of the networking paraphernalia and software can be at the very least overwhelming. But the benefits to a home user are numerous. An Internet connection, whether dialup or broadband can be shared utilising an Internet Connection Sharing method. Information can be shared without having to use removable media (floppies and CDs). Files can be conveniently stored or archived on a single computer for ease of backup as you only require one archive method. Networked computers don't need to be in the same room and a single printer can be shared throughout the entire network. And of course, the main reason to network is gaming goodness!



Let's start with what you physically need to bring up a simple Local Area Network (LAN).

### NIC

The Network Interface Card can be PCI or motherboard based. PCI adaptors can be flashy and expensive or just cheap and just as effective.

### Hubs/Switches

Hubs and Switches can theoretically connect up to 253 computers on one network. A Hub is a dumb switch because it broadcasts all routable data to all computers on the network causing congestion. A Switch is intelligent enough to broadcast data to the right computer. A Hub is good enough for three or four gamers but four or more gamers will benefit from a switch.

### CAT5

Category 5 cable is 5th generation, twisted pair Ethernet cabling and the most popular of all twisted pair cables. CAT5 contains unshielded, twisted pairs (UTP) of copper wire. CAT5 supports 100Mbps Fast Ethernet and cable runs are limited to about 100m. Although CAT5 usually contains four pairs of copper wire, Fast Ethernet communications only utilise two pairs. A new specification for CAT5 cable, CAT5 enhanced (CAT5e), supports 1000Mbps Gigabit Ethernet by utilising all four wire pairs. The RJ-45 connector at the end of the cable looks very similar to the RJ-11 connector on a phone cord but is slightly bigger. If you want to

connect just two computers, you can avoid a hub or switch and use Crossover CAT5 as opposed to Patch or Straight-through cable.

What about some protection? Computers should be protected not only by Antivirus measures but also by Firewalls. This is a system or combination of systems that enforces a boundary between two or more networks. Broadband users should use a hardware Firewall while dialup users can get away with a software firewall.

### Firewall

Monitors all data traffic entering and leaving the LAN and alerts to any attempts of inappropriate use based on certain criteria like high-volume packet inspection, internal address masking and hazardous content detection. A well-deployed firewall provides effective defence against unauthorised access by external users and also provides a central system for the administration of other network security measures. A decent Firewall also performs Network Address Translation and Stateful Packet Inspection.

### SPI

A firewall architecture that tracks each connection traversing all interfaces of the firewall and makes sure they are valid. A stateful firewall will examine the contents of the packet in order to determine more about the packet than just information about its source and destination. A stateful inspection firewall also monitors the state of the connection and

compiles the information in a state table. As an added security measure against port scanning, stateful inspection firewalls close off ports until connection to the specific port is requested.

### NAT

Allows a single device, such as a router, to act as an agent between the Internet and a LAN. This means that only a single, unique IP address is required to represent an entire group of computers. NAT automatically provides firewall-style protection without any special setup. That's because it only allows connections that are originated on the LAN. Some NAT gateways contain a Dynamic Host Configuration Protocol (DHCP) server. DHCP allows client computers to be configured automatically. When a computer's switched on, it searches for a DHCP server and obtains TCP/IP setup information.

How do we complete the LAN? Protocols are a set of rules that govern data communication. Not all protocols are equal, some allow for quicker transfer but sacrifice expansion capabilities such as NetBEUI - (net-booei) short for NetBIOS Extended User Interface. It's an enhanced version of the NetBIOS protocol or Network Basic Input Output System which augments the DOS BIOS by adding special functions for LANs. The Transmission Control

Protocol/Internet Protocol (TCP/IP), is a suite of communications protocols used to connect computers on the Internet. IPX/SPX is also required for some network games and is short for Internetwork Packet Exchange/Sequenced Packet Exchange. Whereas the IPX protocol is similar to IP, SPX is similar to TCP. Together, therefore, IPX/SPX provides connection services similar to TCP/IP. Internet Protocol (IP) addressing is based on the concept of hosts and networks. A host is essentially anything on the network that is capable of receiving and transmitting IP packets on the network, such as a PC or a router. It identifies a computer as a 32-bit address that is unique across a TCP/IP network. An IP address is usually represented in dotted-decimal notation, which depicts each octet (eight bits, or one byte) of an IP address as its decimal value and separates each octet with a period, for example: 192.168.0.1. To complete the picture, there is a Subnet Mask or a TCP/IP configuration parameter that extracts network and host configuration from an IP address. Typically, a subnet will represent all the machines at one geographic location, in one building, or on the same LAN.



# THE BEAST



## In association with Altech Computers

This month our three different machines haven't changed at all, but things are set for a major shakeup next month. By then we'll have final pricing on the Athlon 64 FX-51, as well as Intel's new Pentium 4 Extreme Edition. We might even be able to squeeze the standard Athlon 64 into one of our machines - provided AMD gives us a bloody sample!

We'll also have to give the Athlon 64s a new home, but we're not sure yet which of the Athlon 64 platforms is going to offer the best performance. Rest assured we'll be benchmarking like crazy over the next few weeks to find out.



## CPU, MEMORY AND MOTHERBOARD

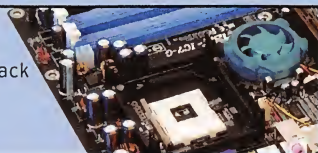
### Intel Pentium 4 3.2GHz 800MHz FSB

Still the fastest chip out of the box, seriously scaring everything from AMD. However, let's hope Intel doesn't rest on its laurels. Bring on 4GHz!  
\$1228 [www.intel.com](http://www.intel.com)



### Abit IC7-G 'Canterwood'

A hella board in a hella package that includes everything from an extra USB back plate to black rounded IDE cables. And it's powered by Canterwood - Serial ATA RAID goodness!  
\$360 [www.abit.com.tw](http://www.abit.com.tw)



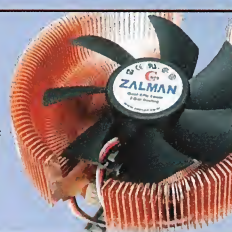
### 1GB Corsair TWINX-4000

A gigabyte of DDR500 RAM for \$770. That is just crazy cheap, especially when the RAM in question is this blisteringly fast. The perfect complement to the IC7-G.  
\$660 [www.corsairmemory.com](http://www.corsairmemory.com)



### Zalman 7000-Cu

The Beast is so chunky, so wild and untameable that you need a real man's cooler stuck on the top of your mighty CPU. Zalman delivers, offering a chunk of metal that performs well and isn't too screamingly loud.  
\$75 [www.zalman.co.kr](http://www.zalman.co.kr)



### Antec TruePower 550W

With 550 watts of blistering power you can plug in as many crazy case fans, cooling systems and front-mounted LCD panels as you like and still enjoy smooth, reliable gaming.  
\$233 [www.antec-inc.com](http://www.antec-inc.com)



## VIDEO, AUDIO AND CONNECTIVITY

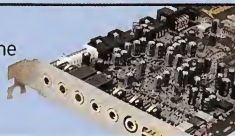
### Gigacube RADEON 9800 PRO 256MB

With more onboard memory than some people's whole PC, the 256MB version of the Radeon 9800 Pro will get your FSAA performance up and keep it up.  
\$870 [www.gigacube.com.tw](http://www.gigacube.com.tw)



### Creative Soundblaster Audigy 2 Platinum

The most powerful consumer-level soundcard on the market. Support for every sound format, including Dolby 6.1 surround.  
\$415 [australia.creative.com](http://australia.creative.com)



### Creative Inspire 6600 6.1

Let your soundcard handle all the decoding and plug these cheap but powerful speakers into the ports on the back. An extra rear channel beefs your gaming surround!  
\$271 [australia.creative.com](http://australia.creative.com)



## STORAGE AND OPTICAL

### Sony DRU510A DVD +/- R/RW

Almost but not quite cheap enough for mere mortals to own, this Sony drive will burn DVDs and CDs at 4X and 24X respectively - tasty!  
\$680 [www.sony.com.au](http://www.sony.com.au)



### Samsung 816BRPS 16x DVD-ROM

It's straight up and down, it's cheap, it's fast, it works well and you need it to copy - sorry, back up - DVDs using your nifty writer.  
\$73 [www.samsung.com.au](http://www.samsung.com.au)



### 2x Seagate 120GB Serial ATA in RAID 0

Thanks to the IC7-G's support for Serial ATA RAID, you can run your 120GB in super-fast RAID 0 mode for even quicker load times - and to be damn cool too, of course.  
\$518 [www.seagate.com](http://www.seagate.com)



## DISPLAY, INPUT AND COSMETICS

### 21" Sony FD Trinitron G520

Until large LCD catches up with small LCD the Beast will stick with dependable, mature, established CRT. And the G520 is one of the best in the business.  
\$1960 [www.sony.com.au](http://www.sony.com.au)



### Antec PlusView 100AMG

It may not be the Rolls Royce of cases but it's roomy, has a built in side window and it has all of Antec's various quick access features. Take note, Lian-Li.  
\$171 [www.antec-inc.com](http://www.antec-inc.com)



### Logitech Elite Black

Smooth mechanism, funky styling and support for both PS/2 and USB make this keyboard the right choice. Real men use ergonomic keyboards though, don't forget.  
\$88 [www.logitech.com](http://www.logitech.com)



### Logitech MX700 wireless mouse.

Normally we wouldn't recommend a wireless mouse for gaming, but the MX700 is an exception due to its high refresh rate.  
\$169 [www.logitech.com](http://www.logitech.com)



## BEAST VALUE:

## \$7911



# THE MUTANT

Thanks to the popularity of overclocking and tweaking, we've included this machine to show you exactly what you can get away with for not much outlay. Tweaked to within an inch of its life, this is the machine we DO own, versus the Beast, which is the machine we'd like to be able to AFFORD to own.

## Intel P4 2.4GHz "C" at 3.3GHz

Truly the most overclockable of all modern CPUs, the 2.4C can be run a staggering 900MHz over its stock speed. With the standard Intel HSF. Now that's value.  
\$320 [www.intel.com](http://www.intel.com)



## Abit IS7 'Springdale'

Yes, it's the cut-down version of The Beast's IC7-G, but it's still well beefy enough to support a furious thrashing and your extra fast running CPU. Springdale is like Canterwood without all the fancy extras.  
\$229 [www.abit.com.tw](http://www.abit.com.tw)



## Logitech Elite Black keyboard and MX700 mouse

If it's good enough for the Beast, it's good enough for the Mutant. Sure, both of these components aren't exactly cheap, but you can't skimp on the interface between you and your box of love. And for a wireless mouse, the MX700 is a ripper.  
\$257 [www.logitech.com.au](http://www.logitech.com.au)



## Antec TrueControl 550W

What could be groovier than a PSU that comes with a 5.25" front plate with dials and knobs for controlling fan speed plastered all over it? Nothing, that's what.  
\$229 [www.antec-inc.com](http://www.antec-inc.com)



## Antec PlusView 1000AMG

What's good enough for the Beast is good enough for the Creature, especially where the price is right. And with this machine, you'll definitely make the most of the side window.  
\$171 [www.antec-inc.com](http://www.antec-inc.com)



## 512MB Corsair TWINX-3200LL

Ah the half-gig sweet spot, is there nothing finer? This RAM is beefy enough to support a bit of tweaking, so perhaps you can drag a little extra performance out of it?  
\$300 [www.corsairmemory.com](http://www.corsairmemory.com)



## Gigacube RADEON 9800 PRO 128MB

Amusingly, the video card is the single most expensive component of the Creature. It's hard to believe that you can now get a RADEON 9800 PRO for a mere \$660, considering just how blazingly fast this video card.  
\$660 [www.gigacube.com.tw](http://www.gigacube.com.tw)



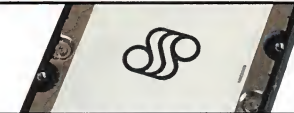
## Zalman VGA Heatpipe Cooler 80C-HP

Bolt this mighty thing to your video card, attach the included fan, and who knows what insane core speeds you can achieve?  
\$60 [www.zalman.co.kr](http://www.zalman.co.kr)



## 120GB Seagate IDE

The first upgrade HDD I ever bought was 6GB and cost \$447. So this is pretty damn cheap. Only standard IDE, but at this price we can't complain.  
\$184 [www.seagate.com](http://www.seagate.com)



## Creative SB Audigy

Lacks a few of the features found on the Audigy 2, but only the ones that don't really have much effect on gaming. There's a lot of soundcard here for not much cost.  
\$159 [australia.creative.com](http://australia.creative.com)



## Creative Inspire 6.1 6600

They're so cheap they're good enough for the Creature too. No decoder, no difficult optical inputs, just ordinary wires plugging in to a set of extraordinary speakers.  
\$271 [australia.creative.com](http://australia.creative.com)



## Samsung 816BPRS 16x DVD-ROM

Same as the Beast, this drive is fast, dependable and has a slightly funkier facade than most of the beige monstrosities currently available.  
\$73 [www.samsung.com.au](http://www.samsung.com.au)



## Samsung 252BRNS 52x24x52 CD-RW

Wow, these things sure got cheap didn't they? Burn CDs in hardly any time at all thanks to 52x writing. Backup all your digital LAN shots for posterity. Pose nude... no wait, don't.  
\$80 [www.samsung.com.au](http://www.samsung.com.au)



## 19" Samsung 995 Dynafiat

Cheaper than the video card but still a lot of sleek, flat monitor. Nineteen inches is pretty much the minimum for decent gaming, and we can't wait until a 16ms LCD this big costs this much.  
\$522 [www.samsung.com.au](http://www.samsung.com.au)



## 4x Antec USB Light Sticks

Pep up the Creature with a few light sticks. Stick 'em on the monitor, in the case, wherever you like. USB powered and respond to sound - clap on, clap off! Other cosmetic additions to the Creature are limited only by your imagination.  
\$132 [www.antec-inc.com](http://www.antec-inc.com)



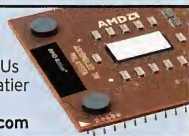
# MUTANT VALUE: \$3647

# the beastie

The cheapest but worthiest PC of all, the Beastie is for all of use who need gaming, the web and to generally have fun without worrying about overclocking or our bank account.

## AMD -Athon XP 2500+ Barton

The cheapest CPUs keep getting meatier and meatier  
\$170 [www.amd.com](http://www.amd.com)



**Abit NF7**  
nForce2 is good and this implementation of it is even better  
[www.abit.com.tw](http://www.abit.com.tw) \$181



## Antec Lanboy

Includes a 350W power supply, window and carry strap.  
\$185  
[www.antec-inc.com](http://www.antec-inc.com)

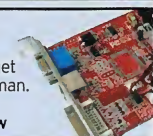


**512MB Corsair PC-3200**  
A budget PC with half a gig of RAM. All praise the open market.  
\$199  
[www.corsairmemory.com](http://www.corsairmemory.com)



## Gigacube RADEON 9800

Yes, a 9800 in a budget system. Holy shit batman.  
\$520  
[www.gigacube.com.tw](http://www.gigacube.com.tw)

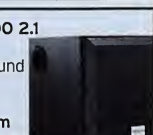


**60GB Seagate IDE**  
Plenty of room for not much cash. Dependable and reliable.  
\$149  
[www.seagate.com](http://www.seagate.com)



## Creative Inspire 2400 2.1

Plug 'em in to the nForce2's onboard sound and it's MP3-tastic!  
\$90  
[australia.creative.com](http://australia.creative.com)



## Samsung 816BPRS 16x DVD-ROM

Good enough for all the PCs on this page, swift and reliable.  
\$73  
[www.samsung.com.au](http://www.samsung.com.au)



## Samsung 252BRNS 52x24x52 CD-RW

Cheap, fast, reliable, what more could you want from a CD-RW?  
\$80 [www.samsung.com.au](http://www.samsung.com.au)



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# SETUP



WRITE TO SETUP AT:

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78 Renwick St  
Redfern  
NSW 2016

setup@pcpowerplay.com.au

## FLICKER

**Q** I noticed a visible flicker on my screen one evening and found that I couldn't change the refresh rate from 800x600/60Hz. I then discovered that the card was not installed properly but updating the Detonators did nothing and now I can't adjust anything! In Device Manager, the driver tab tells me that my MX400 "can't be opened". It's running in an MSI 6337 with XP Pro. Help!

T\_Man

**A** "Can't be opened" is Microsoft cipher for "this hardware device is buggered! But I'm doing the best I can." Your adaptor or the AGP slot is fritzed in one way or another. I suspect the MX400 so try it in another machine, or conversely, try another adaptor in your machine. The problem will remain on your machine (AGP slot) or move to the other rig (fritzed adaptor). It's bound to happen to older GeForce2 cards or motherboards at some point, although some sooner rather than later. Presuming it's the adaptor and if you want to persevere with your 6337 then I suggest you rush out with the speed of a thousand startled gazelles and replace the MX400 while you can; you may even get one with TV-Out for under \$80.

## Microsoft windows



This hardware device is buggered.  
I am doing the best I can.

## HEATING UP

**Q** Why the hell is my computer freezing up? It only does so after a long time (about three hours) and then it's fine after I restart. I am 90% sure it's overheating. If it's overheating, I must need more fans; can you give me a suggestion on fan setup and what type of fan to use. (It's an AMD XP2000+). There is only the basic fan installed at the moment. My heatsink groans (makes a really bad whirring noise) when I start up but stops after 5 minutes. What could this be? There is quite a lot of dust in the computer so could that be it?

Nick

**A** Three hours is a long time for heat to build up. Less than 30 mins is the norm and it can be

just seconds if the heatsink fan has failed or the assembly is quite loose. Since your heatsink fan sounds like it's about to die, it's most likely allowing a very slow heat build up, which a case fan can possibly do nothing about. Get a desk fan, take off the side cover and direct the running fan onto the guts of your rig. Play a big phat game. No problems? Heat is the culprit. You must have an intake fan at the front, down low and you should have an exhaust fan up high, at the back. Your PSU must have an intake fan on the underside as well as exhausting out the back - look for an HEC, Topower or Enermax, as examples, at around 300W. Check out p26 of AMD Tech Doc 23794.pdf for more information and some pretty diagrams.



Surefire way to cool down your computer...

## RESTART

**Q** My computer keeps freezing all the time. The computer just stops responding and you can't move the mouse or do anything and occasionally the whole screen turns blue and it says "Windows protection error. You must restart your computer". The only way I have figured out to stop this problem is to start up Unreal Tournament which usually stops the computer freezing. When I want to play a game I must close Unreal Tournament and then it freezes in the middle of the game. The other problem with my computer is that it won't install WinXP it comes up with a blue screen with lots of writing. I have Shuttle mainboard, a 1.4GHz Thunderbird, 512MB of PC133 and an ATI Radeon 7000/VE graphics card.

Sun

**A** There are more than a few likely causes for the errors. Let's get one up front, right now: a cracked, warez version of WinXP will do this continually as will a system with faulty hardware. Now, let's consider some hardware and software driver issues. Check for inadvertent overclocked frequencies in the BIOS and undo them. It may be a flaky device driver or an actual hardware conflict. If you've recently added new hardware to your system, try removing it and see if the error goes away. An incorrectly configured device

## NUDIST COMPUTER

**Q** Are there any advantages or disadvantages of having the side panels of my case off. As I was told by a Tech, that having the side of the case off actually increased the temperature inside, due to disrupted air flows and turbulence. I was not sure what he was on about but it sounded stupid enough, that it could have possibly been true. Could you please clarify this for me as I have always kept the sides off for easy access.

Chris Ide

**A** If you run something like a DX2 66 or Pentium 90 this is fine otherwise you \*must\* leave the side panels on. In fact, any side panel pressed vents or drilled holes should be covered. While you may not notice anything untoward you are shortening the life of your hardware.







driver also causes this type of problem. Go back and play with its settings. Memory? Check to make sure that your memory modules are the same type and speed. You should also check to make sure that your BIOS is set for the correct amount of RAM. If all of these suggestions check out, try replacing the memory. What UT has to do with it, I don't know, but the issue is freaking me out as well.

## IGNITION?

**Q** My computer won't start properly. When you start it up it stops at the drive enumeration screen, then it tells me "Sec Master Drive - ATAPI Incompatible" and "Press F1 to resume". It does this every time. My computer still works alright but the fact that you have to wait 90 secs every time you start the computer is annoying the shit out of me.

Daniel

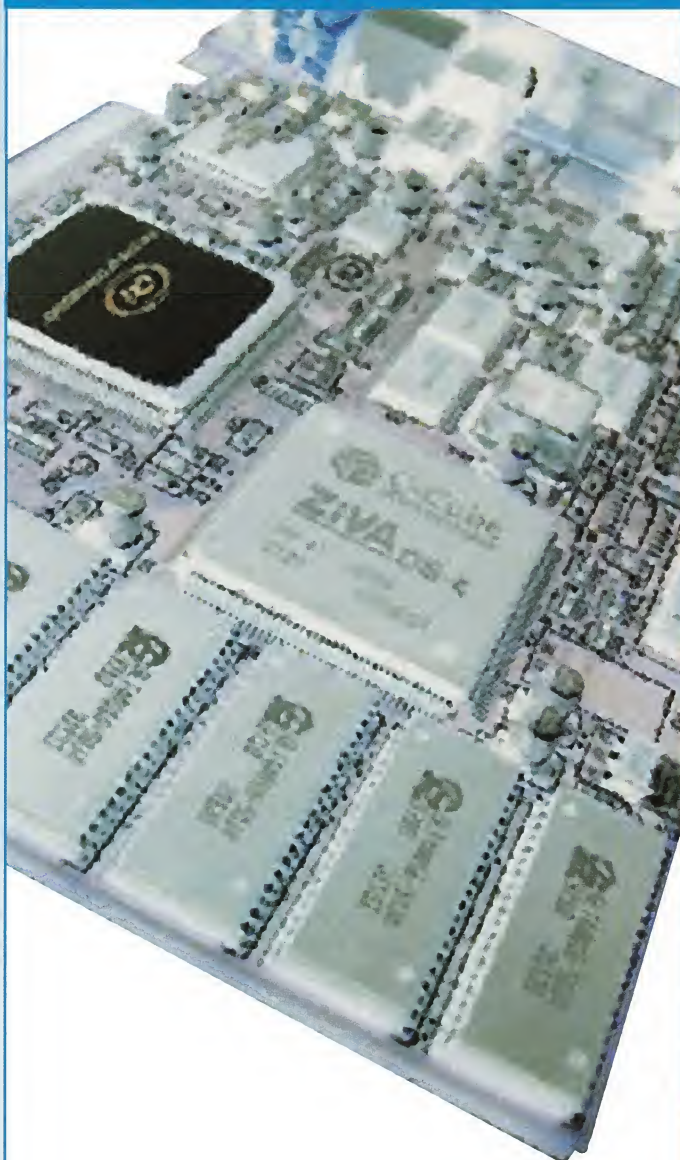
**A** The clue is "Sec Master Drive - ATAPI Incompatible". Wanna play 20 questions? What is actually attached to the Maxtor? An old disk or CD-ROM? Nothing? Is there anything on the secondary drive? What motherboard and what BIOS version? Played with the BIOS recently? I asked Daniel for further information and got no reply. I guess his finger must be stuck on F1.



Oh no... not... It's...  
THE F1 KEY!!!



## CHEAP GRAPHIC CARDS?



I have a Pentium 4 - 2.0GHz, P4B533-E Mother board, 512MB PC2100 DDR and a 64MB MX440 graphic card. With the up coming new generation games such as Doom 3 and HalfLife 2 I want to be able to play these games taking advantage of all the bells and whistles that these games will bring. I realise that I will need to upgrade my graphics card, the problem is that I'm on a fairly tight budget, (as I'm sure many gamers out there are ) what graphics cards can you suggest that will not break my bank balance but will still be able to meet the demands of the upcoming new games.

Marcel Baertschi (New Zealand)

I was hoping you could help me find a new nVIDIA based graphics card with your all mighty wisdom. My current card is an Albatron 440DE on an ECS P4S5A. I need your help because I'm not sure what card to get that will work on my motherboard and I'm on a tight budget (up to \$200). I was hoping for a GeForce FX card but I doubt my mobo is AGP8x compatible.

Dan

Tight times, tight budgets. At a minimum, a new acquisition should support DirectX 7 (not hard to do) and preferably DX8. The latest vid-cards support DX9, the likes of which will be found in the next-gen games that Marcel mentioned. The NVIDIA FX GPU supports DX9 but there are price-point/GPU performance issues. Similarly, the ATi RADEON 9600/9700/9800 are 'DX niners'. Only a 256MB FX5900 Ultra or RADEON 9800 Pro will perform at hires and high AA/AF settings in DX9 games but gaming at 800x600 or 1024x768 with a DX8 card will be fun for a while yet. The first step is to establish AGP slot compatibility and choose a price point for DX8 or DX9. Spend a little on DX8 now and more on DX9 later or just blow it on DX9 now. My experience is that the RADEONs perform better in AA/AF modes than the FX GPU and they're cheaper.



# THE PCPP INTERVIEW

Welcome to the third in our series of industry interviews. This month David Wildgoose speaks with Tim Willits, lead designer on Doom 3 and coordinating director on Quake IV...

## Curriculum Vitae

Name: **Tim Willits**  
 Title: **Game Designer**  
 Company: **id Software**  
 Location: **Mesquite, Texas**  
 Projects: **Quake, Quake 2, Quake 3: Arena, Quake 3: Team Arena, Doom 3, Quake IV family of hardware and software.**

### Why remake Doom?

When John Carmack originally envisioned Doom ten years ago, because of technology and hardware, he was really limited to what he could do with Doom. When he started to develop the brand new technology that we're working with he saw the potential, like the dynamic and realistic lights, bump mapping on the characters. He had all these tools to make this really creepy, scary environment and he thought that this would be awesome to revisit Doom in. The rest of us, being everyone at id except for the three owners, fell in love with computer gaming playing Doom. So it was a chance to go back and make a game in the universe that we all really admired.

### Is it scary trying to recreate such a classic game?

Everybody has different opinions of what Doom is to them. Some people remember Doom for its scary environments, some for its over the top action. We understand that we can't please everybody, but if we can make Doom III a game that all of us internally wants to play and enjoy, we know that there will be many other people who feel the same way.

### Do you advise people to pretend that the original Doom doesn't exist?

That's always a good thing but we also want people to see some of the characters like the Imp, Pinky Demon and Colossal and go "Oh yeah I remember those characters" and they'll appreciate how much cooler they are now. But there's also millions of people out there who never actually played Doom - I know it's hard to believe but it's true. And for them, we want to make a great, compelling game as well.

### Is there going to be anything in Doom III for the fans to recognize, like little in-jokes or puzzles?

Players should be aware that if they walk into a room and there's an item in the middle of the room with a light on it, you can bet that the walls are going to open up and demons are

going to come pouring out, but we do have a few throwbacks. We'll probably try to get the red key in somewhere. Yeah, there will be enough stuff for the classic Doom fans to enjoy.

### What is the working dynamic at id? Does John go off and write whatever new engine he wants and you build a game around it, or is it a more cooperative process than that, where he writes according to your design specs.

In the very beginning of the game process John starts to architect the new technology based on hardware and where things are moving in the future, so he established the vision and the original framework for Doom 3. We look at the technology and design the game that we'd like to play. As we go, there are always things that we need from him that can go to dust. So John actually works with us quite closely and he's at work everyday going over what we need. It's definitely a cooperative process.

### Describe the gameplay experience you want Doom 3 to deliver?

We want to make an interactive horror movie. We want to build tension and suspense mixed with some great combat, and then add more interactivity than has ever been done before. The game will be utilising the physics engine and the GUI technology and interacting with other characters.

### From where have you drawn inspiration in terms of making it more of a horror experience?

The great thing about id is that we're a small company. We have 18 developers and everybody has an opinion, a voice and input to the game. There is a wide range of ideas and inspirations which everyone brings to the collective design part to see what's cool. We then try to work it into the game.

### So there's no specific game or film?

The original Doom got its inspiration from the Aliens movies and Army of Darkness, so obviously the inspiration for Doom 3 is the original. But then,

there isn't one specific place you can say our inspiration comes from.

### It's a first for you guys to hire a script writer?

We contracted a guy named Matt Costello who helped us with the story and then we took that story and visually storyboarded it for all the developers on the team, so they can look at it and see what's going on. And then we worked on the concept of the art for some of the areas and the creatures. Everything grew from those designs. In fact, the storyboard hasn't changed much, which is a good indication that everything was well thought out in the beginning.

### You spoke yesterday that as a level designer storyboarding can be a challenge.

Gone are the days where one guy makes all the layouts. We really had to be more like Hollywood, where we had to think about lighting, what we wanted to do with sound, setting up the scenes like the cinematic and interactive scenes where things happen around the player. It's really a cooperative process and definitely much more of a team process than it was before.

We saw in the demo with the sequence where you're being led through the darkness, a new kind of gameplay experience the new technology has allowed. Are there any other similar experiences we're going to see as gameplay experiences in Doom 3? Oh definitely. Using the flashlight is going to be important. We have other types of scenarios that play out similar to the Dark Maze. This is just a taste of what's to come.

### But you're not talking about it yet? No, well, I don't want to give away the whole game!

Why have you chosen to incorporate the cinematic cuts during play? Some people may suggest that they detract from the immersion. For a long time we have followed the

classic "keep the player in the action" approach, but we feel that with the new technology and the storytelling, that it will add to the suspense and some of the drama. Like the scene where the camera pulls out and shows the Pinky demon coming through and trying to beat down the door. We capture the player and do whatever we actually want to show them to let them figure out how they get out of the situation. I think it works out really well.

### You're on record as saying that multiplayer is limited to four player death match because you want to focus on the single player, but what scope and potential is there for the mod community to design some more expansive and involved multiplayer options?

We've done a lot to make Doom one of the most moddable games available because all of the tools that we use, including the source for all of the maps, are shipping with the game. The multiplayer is scaleable, so the technology isn't limited to four players.

### So a mod player can come out with a 32 player?

Yeah, probably the first multiplayer mod of Doom will be an eight player game. The technology we're using and the tools we're providing will definitely allow mod makers to make some pretty cool stuff.

### John's on record as saying there's a reason why the enemies in id games are always zombies and demons with respect to AI. Do you think you're selling yourself short with statements like that?

Well, I can't speak for John, but the game we wanted to make is full of scary creatures. But we have various levels of intelligence. Security guards will fight from areas that they're at advantage, and monsters will know where they can't get to you and they'll try to ambush you somewhere else. Some guys will run for your face and some guys will stand back and shoot at you. We have a good amount of variation.





Do you think that the more sophisticated AI behavior is something we might be missing from watching you play the demos, because you're just too good at the game? Once you're in there, you'll experience it. It's hard for me to show everyone the game in 30 minutes while I have to show the map and other stuff.

We've seen plenty of dark metallic corridors and a hint of the more hellish demonic areas, but what other types of environments can we expect to see in the full game? We have hell of course, outdoor areas, and big recycling plants. It doesn't take place in just one area.

When you talked about outdoor environments, do you mean large areas or will it be quite small and claustrophobic? Well, it depends on what your definition of what small and claustrophobic is. If we have large gaping vistas of outdoors, then it's just not scary. We tried to make things as scary as possible.

So how do you make those big areas scary?

It's not limited to "it has to be small". That's silly. It's just polygons, we can make huge polygons or really small polygons; it really doesn't matter. We can have people complain that "Quake 3 doesn't have any outdoor areas", well, look at Call of Duty, look at Medal of Honor, great games that have that plan in their game design, that's what they did with the engine. I think that whole debate about outdoors is just silly.

So how do you make those outdoor areas as scary as the indoor areas where you've got all

the shadows?

Exactly, exactly. Like the sun is not scary, so we tried to keep it atmospheric. We originally had the player have more air when they were outdoors, but we wanted to keep the frantic pace up outside so we created more of a hostile environment.

Finally, how much of Doom 3 have we seen so far and how much will surprise us in the final game? It would be hard to nail it down as you've only seen two maps, but we have in the beginning of the game you interact with the characters and then all hell breaks loose and then you go to hell. It's quite wild, I guess.





# FLASHBACK

## Games and tech remembered with Anthony Fordham

### WING COMMANDER 4

**Developer:** Origin  
**Genre:** Space Shooter  
**Graphics Mode:** SVGA, 256 colours, 640x480  
**Sound:** 16-bit digital effects and speech  
**True 3D:** Yes  
**Operating System:** DOS 6.0, Windows 3.1  
**Released:** 1995

**F**lashback does have a tendency to focus only on the good games from that strange era pre-PCPP, so here for a change is one of the less stellar titles, released in 1995.

Wing Commander 4 was not the last in the venerable WC series, but it did mark the death of the dynasty. At the end of WC3 - which amazingly started off as the best FMV game ever and ended as the worst FMV game ever (until WC4) - writer/director Chris Roberts had Mark Hamill blow up the Kilrathi homeworld by flying along a trench and dropping a special bomb into a precise target... hmm... still, at

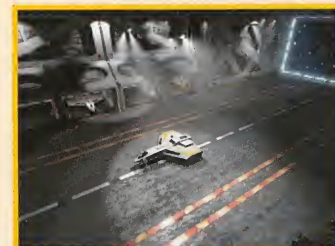
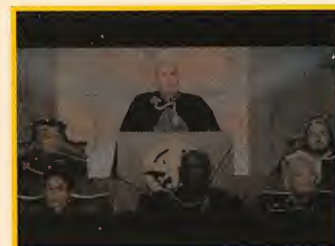
least Hamill would have found the situation familiar. The point is, the Kilrathi homeworld was destroyed, and as a result there are no giant cat puppets in Wing Commander 4. The game is subtitled the Price of Freedom, which turns out to be having to sit through a couple of hours of B-grade action sci-fi interspersed with lacklustre space shooting missions. WC4 followed the proud WC tradition - as inter-mission graphics became more complex, the actual gameplay suffered. WC1 had a cool branching mission structure, where your performance affected the brief cutscenes. WC2 had a

complicated series of character interrelationships which made it impossible to shoot down your wingman (for fun, you understand), and WC3 had a smorgasbord of porn starlets for the player to choose from (no, really).

WC4 had some of the most advanced FMV of the day, since it used real sets rather than blue-screen digital backgrounds. Interestingly enough, the WC blue-screens were all green-screens, because the uniforms of the Terran Confederacy (or was it a Confederation?) were also blue. And that's about the most interesting piece of on-set trivia for WC4 I can come up with, apart from the porn starlet thing. Anyway, the human stars of WC3 were brought back, the sets were upgraded, and the player was treated to four CDs worth of first season Star Trek-esque lurching over papier-mache consoles. The actual space combat gameplay was, unfortunately, rubbish. Five years and a gazillion dollars of revenue after the release of Wing Commander, Chris Roberts and all his little wizards still couldn't come up with anything new worth actually playing.

The rest, as we know, is history. WC: Prophecy brought back the cat puppets and added bug puppets and Glide support, and eventually the whole

thing fizzled out as Chris Roberts flirted with Freelancer and then disappeared into the great whatever. WC4 killed Wing Commander, it's as simple as that.



#### WHY WC4 DESERVES TO BE REMEMBERED

- A stern warning to an industry obsessed with FMV
- Reminded us all that gameplay is king, while video is just queen
- Made us realise we were only playing WC for the cat puppets
- Sounded the death-knell for a proud dynasty

### FLASHBACK TECH

#### SINCLAIR ZX81

**Manufacturer:** Sir Clive Sinclair  
**Significance:** First affordable home computer, hugely programmable and a library of thousands of games made it one of the first gaming machines available to us commoners.  
**Cost:** \$20 - Approx \$250  
**Released:** 1981

**I**f you've read any of the various zeitgeisty cyberchic novels currently doing the rounds including, but not limited to, William Gibson's Pattern Recognition, you may have heard reference to the ZX81, one of PC's most eccentric uncles.

Back in the days when computers were small chunks of integrated electronics and floppy and hard drives were distant visions of the future, the ZX81, its predecessor the ZX80 and their colour-capable offspring the ZX Spectrum had a place on many a geek's lounge room floor.

For hours, these geeks would laboriously tap out programs in BASIC, although tap is probably the wrong word since the ZX81's keys were made of a child-friendly rubber similar to a calculator.

The machine was undeniably a beast - 1K of RAM, 8K of ROM, built around the raw blistering power of the Zilog Z80 processor (as in, "Commander Zilog! Z80 reports the humans have been defeated in Galaxy 10!") and a whole family of add-on components from full-sized keyboard to sound processors to

thermal printers. The data recorder (read: tape deck) could spool new programs onto the machine at a staggering 300 baud - about 186th the speed of current modems.

Alas, the ZX81 only enjoyed a heyday of about three years until the ZX Spectrum hit store shelves in 1984. It had colour. And it could beep.

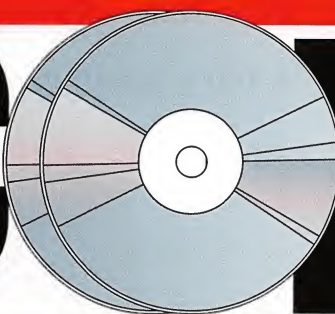
No matter though, the games kept flowing. From Battlestar Galactica to Elite, there was nothing it seemed that programmers couldn't do with this feisty little machine. Indeed, the ZX81 has such a cult

following that a UK company still sells it! Get yours today at [www.zx81kit.com](http://www.zx81kit.com).





# THE DISC



## REQUESTS

We welcome requests so please forward your requests to Disc Producer Paul Noone via email at [cdgod@next.com.au](mailto:cdgod@next.com.au) or write to PCPP DVD Requests, 78 Renwick St, Redfern NSW 2016



**I**n this month's Spotlight, check out *Empires: Dawn of the Modern World*. This RTS game lets you lead civilisations such as the Chinese, United States and Germany from Medieval Age to Modern times. We've included both the singleplayer and multiplayer demos.

There are a total of ten totally awesome demos for you guys to try out this month including *Call of Duty*, *Homeworld 2*, *Jedi Academy*, *LotR: The Return of the King* and *Lock On: Modern Air Combat*.

Once again we have included a number of Mods in Modspplus to try and spice up some of your games. This month, check out the Interstate v A1.1 mod for *Battlefield: 1942* in Modlife. This mod brings racing style game play into BF: 1942. Another very fast paced mod for *Battlefield: 1942* is the *HydroRacers* mod. Instead of

action on land, take to the water instead. And for all you Trekkies, try the *Team Elite v2.0* mod and play with some new classes and weapons in this *Team Fortress* style game play.

The Patches section includes patches to help fix and update some of your favourite games. This month update *Galactic Conquest* from v0.1b to v0.1c. Also check out the first patch for *Tron 2.0*, and the *DesertCombat 0.39k* Patch. As always the Utilities section provides you with applications to help run your computer at its best. The Bunker once again provides several cool items like wallpapers, maps and free games. Check out the Wallpaper section, where you be the judge and choose who should win the PC Powerplay wallpaper competition.

Enjoy life!!!

Amos Hong - Disc Master  
[cdgod@next.com.au](mailto:cdgod@next.com.au)

## DVD CONTENTS

### SPOTLIGHT

*Empires: Dawn of the Modern World* [SP/MP]



### MOVIES

*Anachronox* - Part 9 of 13  
*Deus Ex: Invisible War*  
*Max Payne 2*  
*Gladiator: Sword of Vengeance*



### DEMOS

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*Homeworld 2*  
*Star Wars Jedi Knight: Jedi Academy*  
*Lord of the Rings: The Return of the King*  
*Commandos 3: Destination Berlin*  
*Chrome*  
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*Lock On: Modern Air Combat*  
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*Yager*



### MODS PLUS

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*Team Elite 2.0*  
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*Battlefield: Pirates Alpha 0.21*  
*Outlaws 1.5 Beta*  
*Open Source Jail Break 1.0*  
*Public Beta*  
*Siege 0.24*  
*Underworld Bloodline 2.0*



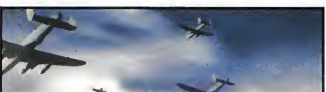
### PLUS MODLIFE

*Interstate v A1.1* [BF:1942]



### PATCHES

*Galactic Conquest 0.1b - 0.1*  
*HydroRacers 1.0b*  
*NWN Retail Patch 1.29 - 1.31*  
*Rally Extreme*  
*TRON 2.0*  
*Battlefield: 1942 1.45.18*  
*Counter-Strike 1.5*  
*Full Retail*  
*DesertCombat 0.39k*  
*NWN Retail Patch 1.10 - 1.31*  
*Tomb Raider: The Angel of Darkness 49 Patch*



### ROM'S BUNKER

Heaps more wallpaper, free games, Winamp skins, map packs and addon files for all your favourite games. Come get some!

### UTILITIES

*3DNA Desktop 1.1*  
*Abandon Loader*  
*Adaptec ASPI Layer 4.71.2*  
*Adobe Acrobat Reader 6.0*  
*Advanced Zip Repair 1.6*  
*AutoDivx Player 3.51*  
*Burn4Free 1.0*  
*Catalyst Radeon Display Driver*  
*Complete Online Gaming System*  
*DivX Pro Bundle 5.1*  
*DirectX 9.0b*  
*Download Accelerator 5.3*  
*GetRight 5.02*  
*G Spot 2.21*  
*HyperSnap-DX 5.2*  
*IsoBuster 1.4*  
*KaZaa Media Desktop 2.5.1*  
*LEET Speak 1.2*  
*NVIDIA drivers 45.23*  
*Ostat 0.31 (build 240 rel 4)*  
*PC-cillin 2003*  
*PowerPoint Viewer 97 8.0*  
*SANDRA Plus 2002 8.59f*  
*Stuffit 7.0*  
*VDM Sound 2.0.4*  
*VIA Hyperion 4-in-1 4.47*  
*Windows Media Player 9*  
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*Your Uninstaller! 2003 Pro*  
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### WALLPAPERS

Check out the works of the 9 finalist in the PC Powerplay wallpaper competition.

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### CD 2

#### DEMOS

*Commandos 3: Destination Berlin*

#### TRAILERS

*Gladiator: Sword of Vengeance*

#### MODS

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*Team Elite v2.0* [ST:EF]  
*Wooden Fort - Raven Rock* [ES]  
**PLUS MODLIFE**  
*Interstate v A1.1* [BF:1942]

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*DirectX 9.0b - f*  
*G Spot 2.21 - f*  
*IsoBuster 1.4 - f*  
*PC-cillin 2003 - d*





# A Rude Awakening

You think life's going great until you wake up in hospital



I'm writing this from some kind of recovery ward at a base hospital which has only given me access to a PC on the proviso that I name neither it or any of the staff who work here, or indeed the exact nature of the injuries sustained by the four British gaming journalists, since the very bizarreness of those injuries would immediately identify not only the hospital but also the doctors involved, and no doubt spark a media feeding frenzy the likes of which this country has never seen.

Of course this goes heavily against the grain of my journalistic quest for excellence so I'll tell you what. I'll write down various injuries and put them in 'single quotes' and what you do, see, is simply multiply the severity of the listed injury by a factor of about, say, twelve, and then you'll have some idea about what we're dealing with here.

As I write this, I'm laid up with a 'sprained toe.' My crazy ex-flatmate is in the bed next to me with a 'nasty case of hives'. The British gaming journalist who wore red Docs is in the ICU with a 'blistered chin'. Pot Roast, the likewise British editor of the possibly unofficial PS2 mag has an 'aggravated compound fracture of both legs' while their Nintendo guy, known only as V- has suffered 'several small-calibre gunshot wounds to the torso.' And finally, the red Doc wearing guy's Mum's mad ex-lodger is in the isolation ward with 'a steel beam about fifteen centimetres thick embedded in his throat.'

There. Technically, I haven't contravened the terms of the very reasonable free medical service contract the El Mariachi club of Ettalong Beach NSW drew up on my admission to keep me from blabbing about exactly what happened at the International Gaming Festival 2003 once the British turned up and started lording it about the place.

"You're all descended from convicts, isn't it?" the guy who wears red Docs had said to me as the crack operative from our least-favourite all girl PR collective, Sulk, ushered us through into the main exhibition hall. That, more or less, was when the fight started.

I know there's always a fight or a fire of some kind, but this one put me in a funny mood. A couple of days ago, which was a couple of days after the fight, in the hospital, my crazy ex-third flatmate regained consciousness in the bed next to mine, only to face the full force of my bitter self recrimination and dramatic reassessment of my life as it currently stood.

"So this is it, huh?" I demanded of his bandaged form, "This is as good as it gets? An endless series of lonely nights broken only occasionally by the vicious fights, fires, gas explosions, building collapses and plague scares you always seem to drag me into?"

"Yurgh," he replied, as well he might.

"I dunno," I said, "I used to think it was enough, you know? The gaming life. The flashing lights. The new technology. I never realised it but two console releases in the one year, right on the heels of the PS2 really kept me going. Now, what is there? A wasteland of promise. Mags full of

endless previews of games that never come out and EBs full of empty cardboard boxes with glued-on box art and Coming Soon stickers on them."

"Hey man it could be worse," said my crazy ex-third flatmate, "at least you aren't living with your parents."

I rounded on him, despite being attached to a series of weights and pulleys that were apparently meant to stop my pelvis from deforming during the fragile healing process.

"No," I said, "I don't live with my parents. I live in their investment property. So rather than living at home and paying them board, I live in their flat and prevent them from collecting rent from a legitimate tenant and paying off the mortgage on the damn thing. My brother's compensation money was the down payment on that flat, you know."

"What happened to your brother again?"

"Dreamcast."

"Oh yeah."

We lapsed into a sullen silence. Then I thought to hell with it.

"Why did you bring a gun to the International Gaming Festival?" I asked, not for the first time, but for the first time since my crazy ex-third flatmate had come round.

"Hey," he replied, "I'm Victor Ninox, you know? I don't just live outside the square, I live outside the four-space geodesic in a folded five-space matrix."

My right eyelid flickered, just a little.

"I suppose I should take heart from you Victor," I said, "Because no matter how down on myself I get, at least I'm not you."

"That's the spirit!" he replied, cheerfully. "Hey, who should I ask about getting my gun back? It wasn't cheap, you know, and I think the guy I bought it off on eBay gave my credit card number to some kind of Russian mafia organisation, because since I bought it I keep getting charged for vodka and bodybags."

"The cops will probably want to hang onto it for a while," I explained, "I think they're calling it 'exhibit A'."



"I thought it was open season on illegal immigrants?" my crazy ex-third flatmate pouted, "How am I supposed to keep up with all these contradictory government policies? Shoot them, don't shoot them, sink their boats, don't sink their boats. Thos insufferably pommie bastards. I made a bomb you know."

"You WHAT?"

"It didn't go off, but."

I sank back against the pillows and regarded the plastered mass of my lower body.

"There were some pretty good games there though, huh?" said Victor, after a few moments of thoughtful introspection.

I had to admit he was right. The game in which the player collected various different kinds of comedy heads all with special powers and them attached them to massive battle tanks in a lovingly rendered 3D battlefield with real line of sight and elevation effects had been quite good. Also the flight sim where all the planes were really giant birds and the pilots were, like, genies or something with purple skin and could shoot fireballs and other spells, that had been quite good too. The crocodile breeding simulator had been unexpected but surprisingly deep, and the guys who had decided to combine the Deer Hunter franchise and Mary-Kate and Ashley Olsen had been simply inspired. "Thirty percent more damage locations than in Soldier of Fortune II!" their banner had promised, and it was right. We'd played it for hours, until that idiot with the red Docs had made his little quip and sent Meatloaf (the unofficial Aussie PS2 mag editor) off the deep end.

My reverie was broken by the feel of a gauze-wrapped hand on my bruised and slightly blistered arm. I looked across to see Victor, my crazy ex-third flatmate, giving what he obviously thought was a reassuring pat.

"Admit it," he said, "gaming is your life. You might hate it now, strung up like a paper monkey in a unicycle dealership, but when you sign yourself out six days from now, you'll be running home to play Railroad Tycoon 3. You'll see."

Paper monkey? I thought.

But I knew he was right.





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